

NCWSS • News

North Central Weed Science Society

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Anita Dille President's Message

I am looking forward to serving as your president for 2016. It is my honor to work with all the dedicated volunteers and members that make the NCWSS such a successful organization. Now that I have transitioned from President-elect and Program Chair to President, I can spend a little time reflecting on the 2015 program, and sharing activities that are planned for the coming year.

Reflections on our 70th NCWSS annual conference in 2015

Enough time has passed since our annual conference, that I can reflect back on it and say it was a great meeting! First, I want to thank our Local Arrangements Committee, led by Ryan Lee, as they did a great job of preparing the venue for our meeting, and second I want to thank Phil Banks, our Executive Secretary, and his staff for managing the meeting details such as registration, arrangements with the hotel, and answering questions from the membership. This meeting was held jointly with the Midwest Invasive Plant Network and I want to thank Mark Renz, Chair of Invasive Weeds committee, and as member of MIPN for coordinating and chairing the 2 days of great presentations and discussions that complemented our regular program.

Several excellent events were sponsored and available for our graduate and undergraduate students. Thanks go to Daniel Smith, Chair of Graduate Student committee, and to David Simpson and Jennifer Luczak with Dow AgroSciences for organizing a pre-conference tour to the headquarters of Dow AgroSciences in Indianapolis. Daniel also organized an excellent symposium on "Molecular Techniques in Weed Science" that brought together a range of speakers from both within and outside the NCWSS region, and provided perspectives from industry, government, and academia. The Graduate Student luncheon and business meeting on Tuesday was sponsored by Dow AgroSciences.

The Student Mixer and Quiz Bowl event on Monday evening was sponsored by BASF Corp., and this event is always well attended as it is a chance for everyone to get reacquainted, catch up with friends and colleagues before getting into the science of the meeting!

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If you are a member of the NCWSS and have material you would like to submit to the Newsletter, please send it to:

Vince Davis at
Vince.davis@basf.com



President message — continued

The student paper and poster contests once again highlighted the excellent work being completed by our students and professionals in our weed science discipline. Congratulations to the award winners that are listed later in the newsletter. A total of 42 graduate student papers, 44 graduate student posters, and 12 undergraduate posters were evaluated during the meeting. Thanks goes to all the hard work by our Resident Education committee, chaired by Doug Nord who oversaw the undergraduate poster judging, first vice-chair, Mark Bernards, who led the judging of the graduate student oral papers, and second vice-chair, Maynak Malik, who led the judging of the graduate student posters. Also, a big thank you to all the volunteer judges or we wouldn't be able to offer this opportunity to our students. Please consider volunteering to be a judge as soon as you hear the call before the 2016 meeting!

The General Session on Tuesday morning was a great start to our 70th NCWSS annual meeting. We were welcomed to Indianapolis and Indiana by Ted McKinney, Director, Indiana State Department of Agriculture. He reflected on how agriculture and weed management changed during his time on the family farm, during his work experiences, and he challenged us, as a profession, to keep progressing and making excellent contributions. Our general speaker was Dr. David Vail, a historian and archivist at Kansas State University. He provided a historical perspective on how the North Central Weed Control Congress came into being, the roles this organization has had in shaping pest management across the region, and the how the effective dialogue needed among scientists that come from academia, private industry, and government organizations continues as a tradition in our weed science profession to address multitudes of issues.

John Hinz reflected on his term as NCWSS

president in 2015 and highlighted the key activities and outcomes from the past year. We also took a moment of silence to remember colleagues that had passed away since our last meeting. Once the general session was over, we all quickly headed out to begin judging, learning from, or visiting with colleagues for a busy three days.

Other key activities for our membership that occurred during the 2015 annual meeting included the second “Women in Weed Science” Networking Breakfast event held on Wednesday morning. We were excited to have Susanne Wasson, US Commercial Leader for Crop Protection Business with Dow AgroSciences, visit with us over breakfast and share her story and perspectives.

Thank you to Stott Howard, Chair of the Industry Committee for organizing the “What’s New in Industry” session on Wednesday afternoon that had a standing room-only crowd and provided highlights across the industry of what is coming for 2016. He also planned the Industry Breakfast that was held on Thursday morning. Those in attendance heard a great presentation by Dr. Dave Gustafson, Director for ILSI Research Foundation’s Center for Integrated Modeling of Sustainable Agriculture and Nutrition Security entitled ‘Future shock now – current climate change impacts on the agri-food system’. During their business meeting, it was clear that this event is really open to all attendees at the meeting, no affiliation with industry necessary. The Industry Committee was going to investigate options so that more of the membership would attend.

At the Awards Luncheon, we were entertained by our MC Harlene Hatterman-Valenti, and we recognized and congratulated our Distinguished Achievement Award winners, welcomed two new Fellows, and announced the winners of the student paper and poster contests.

**The NCWSS Newsletter is Edited by Vince Davis
with content provided by the members of the Society
Photos provided by Joe Omielan**



President message — continued

We also recognized our outgoing Past-President J.D. Green and welcomed our new Vice President Christy Sprague.

I would like to take this time to acknowledge the Sustaining Members of our society, who through their generous support help defray the costs of many of our activities during the annual meeting and throughout the year.

Once again, I hope that each of you found something stimulating and useful at the 70th NCWSS annual meeting.

Now, on to 2016 Activities

Volunteer for a committee

The NCWSS is an organization that functions based volunteers that serve on committees and are program section chairs. I want to thank all of you for your dedicated service to the NCWSS, and let me know if I can facilitate your committee activities through the coming year. **These committee and chair assignments are found on our NCWSS.org website.** Please review and let me (Anita Dille, dieleman@ksu.edu) of any needed corrections to individuals listed or their contact information. Also, there is a place on our website for members only to volunteer for a committee: [Members only, (login), Volunteer Opportunities]. Check as many as you are interested in and submit. The Chair of that committee will be in touch.

Searching for new Executive Secretary

Phil Banks has announced that he will retire after the 2016 annual meeting. He has been critical in ensuring the success of our annual meetings and society by serving all members. He will be greatly missed.

Proposals have been solicited and received for business management and executive secretary services for all regional and affiliated weed science societies that Phil has worked with as well as combined with the WSSA's search for a

new Executive Secretary as Joyce Lancaster has announced her retirement after the 2017 WSSA annual meeting. These proposals are being reviewed, questions asked for clarification, and potential interviews will take soon.

Summer Weed Contest

The 2016 Weeds Contest will be hosted by Purdue University, West Lafayette, IN. **Please mark your calendars for July 27-28** and plan to participate in this great event as a volunteer or to compete as a student. More information is listed later in the newsletter.

Science Policy Committee

As your President, I serve on the WSSA Science Policy Committee and receive requests to co-sign letters on behalf of NCWSS. These letters range from providing comments on impending legislation to indicating our support (or not) of increased funding for the sciences to minimizing burdens on professionals due to increasing regulations. For example, up to this point in time, I have co-signed a letter with comments to the EPA's "Proposed Revisions to Regulations on Restricted Use Pesticide Applicator Certification", and a letter to the House Appropriations Agriculture Subcommittee in support of full funding for USDA-AFRI programs. I may be in contact with the membership to fully understand the NCWSS role in various policy decisions.

Finally, I want to thank John Hinz for his contributions and excellent leadership to the NCWSS as 2015 President. I wish you a productive 2016 and look forward to hearing great things about your work at the next meeting in Des Moines, IA on December 12-15, 2016. I know that your President-elect and Program Chair, Greg Dahl is busy checking with the Des Moines Marriott Downtown hotel and working with the Local Arrangements Committee to prepare a great meeting.

Sincerely,

Anita Dille; President
dieleman@ksu.edu, 785-532-7240



Past President – John Hinz

It was a pleasure and an honor to serve as North Central Weed Science Society President in 2015. I really enjoyed working with all the wonderful people on the Board of Directors.

Our meeting in Indianapolis was a great success. Executive Director Phil Banks, reported that there were 402 (301 members and 101 students) people in attendance for the annual meeting. There were also 126 people who attended the Midwest Invasive Plant Network Symposium. This is very similar to the 405 people who attended the North Central Weed Science Society meeting in Minneapolis.

I want to personally thank Anita Dille, our new NCWSS President, for her leadership in developing the program. Anita also organized the Women in Weed Science Breakfast, which was a great success again this year. I also want to thank Daniel Smith and the graduate student committee for organizing the Graduate Student Symposium. Thank you to David Simpson and Dow AgroSciences for hosting the Graduate Student Tour prior to the meeting. I want to thank Stott Howard for organizing the What's New in Industry session and the Industry Breakfast. I also want to thank Mark Renz for organizing the Midwest Invasive Plants Network symposium. Thank you to all the many other

volunteers that serve on committees, volunteered to be paper or poster judges or judged at the summer weed contest. A big thank you to Ryan Lee and the Local Arrangements Committee for all their efforts to run the meeting smoothly. I also want to thank Phil Banks for all his work to make the meeting run well. Thank you to all our sustaining members who supported the student mixer, student luncheon, society breaks and social events at our annual meeting. I want to thank the hotel staff at the Indianapolis Hyatt for their hard work and responsiveness.

My key priority in 2016 will be to solicit nominations for the Distinguished Achievement Awards, the Outstanding Graduate student Award and Fellows Award. Please think about nominating a deserving colleague of yours for one of these awards. The process is not difficult and is very rewarding to both the nominator and the award recipient. The process is posted on our NCWSS website. More information will follow in the summer newsletter.

I would like to close by thanking all my fellow officers for their contributions to NCWSS. We are particularly indebted to J.D. Green who has served our society in many capacities including the presidential rotation the past 4 years. I am confident that our new board lead by Anita Dille will serve us well in the upcoming year.

Sincerely, John Hinz; Past President



Distinguished Awards 70th Awards Luncheon



PROGRAM

- Master of Ceremonies..... Harlene Hatterman-Valenti
- Graduate Student Paper Awards..... Mark Bernards
- Graduate Student Poster Awards..... Mayank Malik
- Undergraduate Student Poster Awards..... Doug Nord
- Outstanding Graduate Student Award..... J.D. Green
- Fellows Duane Rathmann
- Presentation of New Officers John Hinz



**Service
Bryan Jenks**

SERVICE. This award is given for exceptional achievement in areas other than education or research. Outstanding, creative contributions in service or leadership in activities that bring significant, important changes in weed science are criteria for this award.

Brian Jenks received B.S. and M.S. degrees from Utah State University and Ph.D. from the University of Nebraska-Lincoln. Brian has served as a Weed Scientist with North Dakota State University since 1997. He also served as the Extension Coordinator for the National Jointed Goatgrass Research Initiative from 1995-1997.

Brian has conducted weed research in 20 different crops grown in western ND. His research projects have focused on annual and perennial weeds such as Canada thistle, milkweed, prickly lettuce, false chamomile, wild buckwheat, kochia, volunteer canola, and others. A major focus has been to develop new weed control programs in minor crops. Brian has been recognized for excellence in research by the Northern Canola Growers Association and the ND Dry Pea and Lentil Association. Brian has conducted IR-4 studies for 18 years and received an IR-4 meritorious service award.

Brian has been active in the North Central Weed Science Society and the Western Society of Weed Science serving in various board and committee assignments. Most recently he served as the Chairman of the Strategic Planning Committee and Presentation Recording

Doug Nord was raised on a grain and livestock farm near Hawley, Minnesota. Doug received his B.S. degree in Agronomy from the University of Minnesota and was introduced to Weed Science while working in the Extension Weed Science Department as a student at Minnesota. Doug received his M.S. at North Dakota State University. Doug then took a Research Scientist position with Servi-Tech Research in Dodge City, Kansas where he conducted a wide range of field trials. The period from 1987-1992 was the initiation of utilizing “Good Laboratory Practices” in the chemical residue sector of product registration. Doug helped develop this aspect of the contract research for Servi-tech. In 1992 Doug joined Diamond Ag Research in Garden City, Kansas. Doug conducted field experiments for Diamond Ag Research until taking ownership of the company in 1995.

Diamond Ag Research conducts a wide range of plant-protection chemical, seed, biological, and soil fertility trials at their primary location in Central Kansas and at several sites across Kansas. Diamond Ag personnel conduct pesticide efficacy testing, pesticide-residue testing, and regulated seed testing for development of products in the agriculture industry. Doug initiated a summer-intern program in 2008 that enlisted 3-4 university students each year to work at Diamond Ag. This has been a great program providing valuable labor for Diamond Ag and hands-on training for the students. Doug’s wife Cathy who is also a Weed Scientist has been instrumental in operating Diamond Ag Research over the years.



**Service
Doug Nord**

Doug has served the NCWSS as poster and oral presentation judge, Regulatory Section chair, Kansas Regional Director, Student Summer Contest volunteer, and hosted the Student Contest in 2012 at the Diamond Ag Research facility. Doug currently serves as the Resident Education Chair. Doug and Cathy have a 15-year old son and a 13-year old daughter and spend most of their free time watching middle-school and high-school sports events.



Industry Marvin Schultz

INDUSTRY. Awards in this category are given to representatives of industry who meet the basic guidelines in the above education, research, or service categories. For these individuals, it is important to include the contributions this individual has made to weed science within the industry. Examples might be: patents, development of unique formulations, development of research techniques, discovery of unique uses for a product, or service to NCWSS or to agriculture in general.

Marvin Schultz was raised on a crop and dairy farm near Versailles, Ohio. He received his B.S. and M.S. degrees in Agronomy - Weed Science in 1975 from The Ohio State University. He went on to receive his Ph.D. degree in Agronomy - Weed Science in 1979 from the University of Nebraska at Lincoln, where he researched the biology and control of hemp dogbane under the guidance of his advisor Dr. Orvin Burnside.

He began his professional career as a Plant Science Representative with Lilly Research Laboratories in February, 1979 based out of Bismarck, ND. He later relocated to Minot, ND in 1983, to Mankato, MN in early 1987, then on to Memphis, TN in late 1988. The DowElanco joint venture (between Lilly and Dow) resulted in a move for Marvin to the Greenfield Research Station in Indiana in early 1990, where he researched new corn and soybean herbicides for the next six years.

Marvin then worked as a Field Development Biologist for Indiana, Ohio, and Michigan for three years. In November, 2000, Marvin moved his office to the Indianapolis headquarters of Dow AgroSciences to assume the role of Global Technical Expert for corn and soybean herbicides. In this role, he provided oversight for all Field Research activities for several Dow AgroSciences herbicides around the globe for the next ten years, and traveled to countries in Europe, Latin America, and Asia. During the last six years, Marvin trained and mentored new field Scientists hired into Dow AgroSciences in North America, and also served as a lead tester and trainer for data management tools used by Dow AgroSciences researchers. After 36 years with Lilly, DowElanco and Dow AgroSciences, Marvin retired in April, 2015. Since then, he has worked as a part time contractor for Dow AgroSciences.

During his career, Marvin's work focused on herbicides, but also included insecticides, fungicides, and growth regulators. In the northern plains, he led the development of Treflan in spring wheat, sunflower, and summer fallow; and Sonalan in sunflower, drybeans, and safflower. In the Southern U.S. he worked in soybeans, cotton, citrus, and rice; and he coordinated the first release of Spinosad insecticide to university researchers for testing in cotton. In Indiana, Marvin focused his efforts on development of the sulfonanilide herbicides flumetsulam, cloransulam-methyl, and diclosulam. He was also very active in the early development of the new Enlist technology. Late in his career, Marvin was a valued mentor to many new Field Scientists at Dow AgroSciences.

Marvin is a member of the NCWSS, WSSA, and CAST. He also served as a representative to HRAC and HRAC-NA for ten years. He has been a member of the NCWSS since 1975, during which time he has attended most of its annual meetings and presented several papers. He has served at times as section chair, judge for graduate student paper contests, and on the local arrangements committee.

Marvin has been married to his loving wife Elaine for 39 years. They have a daughter, Robin, a son, Brian, and three grandchildren. In retirement, Marvin and Elaine look forward to spending more time with their family, and traveling with their new camping trailer.



Professional Staff
Bruce Ackley

PROFESSIONAL STAFF. This award recognizes outstanding and sustained contributions in support of weed science activities in the North Central region. 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 weed science research, extension, or resident education for at least five years at the time of nomination.

Bruce Ackley was born and raised in Ohio on a family farm where at a young age he learned the joy of weed control by hand weeding shattercane from soybean fields for his father. This interest led him to The Ohio State University where he received his B.S. in Crop Science. Bruce first became interested in extension and research while interning at The C. Wayne Ellett Plant and Pest Diagnostic Clinic, and he subsequently pursued an M.S. in weed science at OSU under the direction of Dr. Kent Harrison. While working on his M.S., Bruce was presented with the opportunity to work with the weed science group as an OSU Extension Program Specialist. He has held this position since 2008, and it continues to present him with rewarding opportunities in teaching, research, and extension.

RESEARCH. Awards in this category are to recognize outstanding research achievements in weed science. Selections will be based on demonstrated excellence and creativity in research accomplishments; in conducting research and applying the results to solve problems in weed science; and, in applying unusual creativity to the research effort.

Darren Robinson grew up in Winnipeg, Manitoba. He received a B.Sc. (Honors) in Biology from the University of Winnipeg in 1992, and he completed his M.Sc. in 1995 in Plant Biology at the University of Manitoba. From there, he moved on to the Plant Agriculture Department at the University of Guelph, and in 2000, he received a PhD in Weed Science. Darren worked for a short time at the Alberta Research Council as a Research Scientist until June of 2001, where he conducted weed management research in pulse crops, cereals and canola. Darren was hired as a College Professor by Ridgetown College in 2001 to teach horticultural weed management, turf management, and ecology and conduct weed management research in vegetable crops. He became a member of the Department of Plant Agriculture at the University of Guelph in 2004, and was promoted to Associate Professor in 2009, during which time he has developed a research program on integrated control strategies in conventional and reduced tillage systems for vegetable crops. Darren coordinated the Horticulture Diploma at Ridgetown from 2004 to 2009, and teaches Horticultural Weed Science, Ecology, and Applied Weed Science at the diploma level. His current research focuses on improving access to available herbicides, developing strategies for improving the timeliness of application, development and validation of heat unit models for predicting weed emergence, and determining the effect of previous cropping practices on weed population shifts in high value crops.



Research
Darren Robinson

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Research Darren Robinson

To date, **Darren Robinson** has published 85 peer-reviewed manuscripts, co-authored 3 book chapters, advised 14 graduate students, presented 74 papers at scientific conferences, and given 121 extension presentations and 19 short-courses. Darren served on the board of the North Central Weed Science Society as provincial director, as a member of the Long Range Planning Committee, and has chaired the Horticulture and Ornamentals section. He currently chairs the Outstanding Paper in Weed Technology sub-committee, serves as an Associate Editor for Weed Technology Journal and sits on the WSSA Extension Committee.



Outstanding Graduate Student Award: The North Central Weed Science Society Outstanding Graduate Student Award recognizes one outstanding graduate student who is a NCWSS student member. This award will be given to a graduate student who is actively involved in the Society, as well as contributor to the field of weed science through extension, research, and teaching.

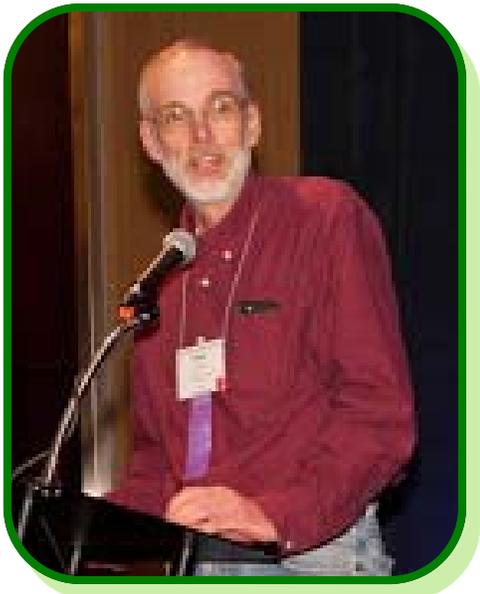
Cody Creech was raised on a dairy farm located on the Utah/Idaho border. He attended Utah State University for both his B.S. and M.S. which was 30 minutes from the family farm. This allowed Cody to continue to help on the dairy as needed. While earning his B.S. degree in Business Operations Management with a minor in Economics, he managed a 3,000+ acre dryland wheat farm. After graduation, he left the dryland farm, married his wife Natalie, and returned to Utah State to earn a M.S. in Plant Science with Dr. Corey Ransom. His M.S. research was conducted through the USDA-ARS Forage and Range Research Lab and focused on understanding the factors that influence the germination of the perennial plant forage kochia.

Outstanding Graduate Student Cody Creech

Cody continued his education at the University of Nebraska completing a Ph.D. in Weed Science under the direction of Dr. Greg Kruger. His doctoral research focused on understanding the impact of herbicide application technologies on herbicide spray characteristics and performance. He studied at how different nozzles, carrier rates, adjuvants, and pressure interact with the control of different weed species with different herbicides.

Cody shared his research results through four Extension publications and 14 Extension presentations. He has also authored several peer-reviewed papers in Weed Science and Agronomy journals and has presented 12 paper and poster presentations at regional and national meetings, placing twice in Graduate Student Poster Competitions. Cody has authored or co-authored 26 papers and posters at the North Central meetings while a graduate student and many were presented by international interns which he helped mentor. Throughout his time at Nebraska, Cody has been involved in the NCWSS Summer Weed Science Contests placing in 2013 and 2014. Cody has also served as a manuscript reviewer for Weed Technology and as Chair and Vice-Chair of the Equipment and Application Methods section for the NCWSS annual meeting. In addition, Cody was also a teaching assistant for a Weed Science class taught at University of Nebraska.

Upon graduation, Dr. Creech was hired as an Assistant Professor and Dryland Cropping Systems Specialist for the University of Nebraska at the Panhandle Research and Extension Center. He currently lives near Scottsbluff, NE with his wife Natalie and three children.



Fellow Award Dave Johnson

FELLOW AWARDS: Fellow is the highest honor that the Society can confer to an individual member. Only individuals who have made outstanding contributions to weed science (no more than 0.5% of the membership) receive the award each year. Fellows are considered life-time members of the NCWSS.

Dave Johnson is Product Development Manager for DuPont Crop Protection, where he is responsible for coordinating research and development activities on DuPont herbicide products and programs for soybean trait technologies in US markets. He is located at the Pioneer headquarters in Johnston, IA. Dave grew up near Philadelphia and got his BS in agronomy from Penn State and his MS and PhD in weed science at Arkansas. After grad school he worked in herbicide discovery at American Cyanamid, where he was on the team that discovered the PPO herbicide saflufenacil. He was then a field R and D rep for Cyanamid/BASF in Minnesota, where he conducted field research on products such as Raptor, Lightning, Extreme, Prowl H₂O, Impact/Armezon, numerous experimental herbicides, plus fungicides, insecticides, and traits. After BASF he managed a research farm for Penn State. Dave joined DuPont Pioneer in 2008 as a Sr. Research Scientist responsible for leading efficacy evaluations for herbicide-tolerant traits in soybeans and corn. He started his new role at DuPont Crop Protection in early 2015.

Dave's service to NCWSS includes the "presidential cycle" (President in 2013), hosting the 2014 summer student weed contest, and chairing the Program, Resident Education, Nominating, and Distinguished Achievement Awards committees, plus serving on other committees and as a judge at various contests. He organized three symposia for the annual meeting and initiated the Student Quiz Bowl at the BASF mixer and the Undergraduate Poster Contest. He was also active in the Northeastern Weed Science Society, Southern Weed Science Society, and served as Associate Editor for *Weed Science* and *Weed Technology*.

He currently lives in Des Moines, IA with his wife Jo Anna, who he met in the weed nursery at the University of Arkansas. He enjoys woodworking, baseball, gardening, native plants, hiking and camping, bicycling, and winter sports.

Mark A. Wrucke was raised on a corn and soybean farm in southern Minnesota where he developed a strong interest in weed control while walking soybean fields with a hoe. Although his primary interest following high school was to start farming, he took the advice of his father and enrolled at Mankato State University in Mankato, MN. Mark eventually transferred to South Dakota State University where he received his B.S. in Agronomy. Mark received his M.S. and Ph.D. in Agronomy (emphasis in weed control) while working as a Research Assistant in Plant Science at SDSU. In 1986, Mark joined Union Carbide Ag Products as a Field Development representative based in Des Moines, IA. In 1987, Rhone-Poulenc purchased Union Carbide Ag Products and Mark was relocated to Fargo, ND. Mark later (1997) relocated to Mason City, IA as the Technical Service rep for northern Iowa. With the formation of Aventis in 2000, Mark was named the Northern Technical Service manager based in Farmington, MN. In 2002, he was appointed Regional Manager for the Development & Market Support Team in Bayer CropScience. Mark currently is the Bayer CropScience Field Operations manager for the Northern region consisting of 16 field reps covering 16 states.



Fellow Award Mark Wrucke

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Fellow Award Mark Wruke

During his professional career, **Mark Wruke** has been actively involved in the development of isoxaflutole and other HPPD inhibitor herbicides, several herbicides currently used in cereal crops, and numerous other fungicides, insecticides, seed growth products and safener technologies. Many of these products continue to be widely

used by crop producers in the US. In 1999, Mark was recognized as one of the “Best of the Best” in Technical Service for his company. He has also been able to support several graduate students through the Graduate Recruiting and Development program of Bayer CropScience.

Mark attended his first NCWSS meeting in St. Louis as a graduate student and has attended nearly every meeting since then. He has been a member on or chaired the Nominating, Constitution & Operating, Legislative Information, Distinguished Achievement, Fellow, Industry and Program Committees. Mark served on the Executive Committee and as President of the Society in 2011. He has authored or co-authored over 35 papers and posters and has volunteered many years as a judge of student paper and poster contests and for the summer weed science contest. Mark is also a member of the Weed Science Society of America, Western Society of Weed Science, North Central Branch of the Entomological Society of America and CAST.



Student Paper & Poster Presentation Awards

There was excellent participation with 42 graduate student papers, 44 graduate student posters, and 12 undergraduate posters evaluated. As a reward, first place winners received \$200 and second place \$100. Congratulations to all the award winners. Special thanks goes out to all the judges and Resident Education members overseeing judging (Doug Nord, undergraduate posters; Mark Bernards, graduate papers; and Maynak Malik, graduate posters). Thanks again to everyone who participated in the contests.

Proceedings and recordings of all 2015 presentations are posted on the website at: www.ncwss.org. Some presentations may not display correctly on some older computers or browsers. If this happens, try a different browser. You may have to adjust your volume on some video presentations. Please remember that the presentations are for your personal viewing and learning. Any other use requires permission from the author.

Graduate Student Paper Contest (Chair Mark Bernards)

Agronomic Crops



1st

Christopher M. Budd, University of Guelph-Ridgetown. How to improve the consistency of glyphosate-resistant Canada fleabane (*Conyza canadensis* L. Cronq.) control with saflufenacil: An investigation of tank mix partners and optimal time of day application.



2nd

Matthew Underwood, University of Guelph-Ridgetown. Interaction between Xtendi-max™ and group 1 herbicides for volunteer corn control in soybean.

Graduate Student Paper Contest (continued)

Equipment and Application Methods



1st

Jamie Long, Purdue University. Influence of adjuvants on dicamba volatility and efficacy.



2nd

Travis Legleiter, Purdue University. Spray solution deposition and retention on glyphosate-resistant weeds in narrow row soybean as influenced by spray nozzle design.

Herbicide Physiology and Extension



1st

Nick Harre, Purdue University. Distinct glyphosate-resistant phenotypes in giant ragweed alter the magnitude of resistance.



2nd

Cara McCauley, Purdue University. Influence of horseweed (*Conyza canadensis*) height on the efficacy of halauxifen-methyl, dicamba, and 2,4-D.

Weed Biology, Ecology, Management



1st

Rodrigo Werle, University of Nebraska. Modeling shattercane population dynamics in a herbicide-tolerant sorghum cropping system.



2nd

Jamie Farmer, University of Missouri. Does waterfowl migration = weed seed distribution?

Graduate Student Poster Contest (Chair Maynak Malik)

Agronomic Crops



1st

Ethann Barnes, University of Nebraska. Control of glyphosate-resistant common ragweed (*Ambrosia artemisiifolia* L.) in glufosinate-resistant soybean.



2nd

Debalin Sarangi, University of Nebraska. Season-long control of glyphosate-resistant common waterhemp as influenced by split-applications of very long chain fatty acid synthesis inhibitors in soybean.

Equipment and Application Methods



1st

Thomas Butts, University of Nebraska. Wide range of droplet size distributions from non-venturi nozzles.

Horticulture and Ornamentals



2nd

Amanda Crook, North Dakota State University. Marketability effects from simulated glyphosate drift injury to Red Norland potato.

Herbicide Physiology



1st

Cara McCauley, Purdue University. Efficacy of foliar applications of halauxifen-methyl compared to 2,4-D and dicamba on glyphosate-resistant horseweed (*Conyza canadensis*).



2nd

Garth Duncan, Purdue University. Influence of environmental factors on the efficacy of paraquat.

Graduate Student Poster Contest (continued)

Weed Biology, Ecology, Management



1st

Jamie Farmer, University of Missouri. Influence of tillage methods on management of *Amaranthus* species in soybean.

Rangeland, Pasture, & Industrial Vegetation Management



2nd

Zach Trower, University of Missouri. Relationships between weed incidence, soil fertility, and soil pH in Missouri pastures.

Weed Biology, Ecology, Management



1st

Nick Harre, Purdue University. Shortening physiological dormancy of giant ragweed seed enables rapid germination for research.



2nd

Joey Heneghan, Purdue University. Phenology of five waterhemp populations grown in a common environment.

Undergraduate Student Poster Contest (Chair Doug Nord)

Agronomic Crops



1st

Kyle Russell, Western Illinois University. Antagonism of clethodim tank-mixed with dicamba or 2,4-D: Response of common grass weeds.

Equipment and Application Methods



2nd

Andjela Obradovic, University of Nebraska. Impact of nozzle type and adjuvant on the performance of clethodim on volunteer corn (*Zea mays*).

Undergraduate Student Poster Contest (continued)

Agronomic Crops



1st

Kristina Simmons, Western Illinois University. Soybean yield as affected by planting date and relative removal time of cover crop or winter annual weeds.

Herbicide Physiology



2nd

Milos Zaric, University of Nebraska. Control of common lambsquarters (*Chemopodium album*) using different glyphosate formulations.

Undergraduate Hyatt Scholarship



Katelyn Van Treck, University of Wisconsin-Madison

The Undergraduate Hyatt Scholarship

For many years, Hyatt hotel has provided free accommodations at the annual NCWSS meeting for the overall top NCWSS undergraduate student during the previous Summer Weed Science Contest. This is an excellent partnership to help increase undergraduate student exposure to our great society. The 2015 winner was Katelyn Van Treck.

Congrats Katelyn.

2016 Summer Weed Science Contest



The 2016 NCWSS Collegiate Weed Contest will be hosted by Purdue University, at the Purdue Diagnostic Training Center located at the Purdue Agronomy Center for Research and Education in West Lafayette, IN on July 27-28, 2016. **To view everything about the 2016 contest including the rules, how to get there, where to stay and more, go to the Weed Contest page on our website by following this link: <http://ncwss.org/weed-contest/>**

The deadline for contest registration is June 17, 2016.

To volunteer as a judge or help with other parts of the contest, follow this link: <http://ncwss.org/wp-content/uploads/2015/03/2016-Weed-Contest-Volunteer-Form.pdf>

If you have questions, please contact: **Bill Johnson** (wj@purdue.edu) or **Bryan Young** (BryanYoung@purdue.edu)

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J.D. Green, Outstanding Graduate Student Award
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2nd Annual “Women in Weed Science” Networking Breakfast Anita Dille

Our second annual “Women in Weed Science” networking breakfast was a resounding success. We had 45 female meeting attendees that participated on Wednesday morning in round-table discussions over a wonderful breakfast. I want to thank Cara McCauley, PhD student from Purdue Univ. for organizing an ice-breaker activity so that we could get to know each other better and put names to faces. We then enjoyed hearing the life story and reflections on a career in industry by Susanne Wasson, US Commercial Leader of Crop Protection with Dow AgroSciences. This networking event provided opportunities for the attendees to share a bit about their careers, their lives outside of work, and to ask questions from colleagues in different career paths. For the remainder of the meeting, it was great to see groups of women that met for the first time of breakfast, now greeting and visiting with each other, and continuing their conversations. Thank you to the NCWSS Board for supporting this activity. We look forward to another great networking event in Des Moines, IA in December 2016.



Washington Report

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). Below (**Table 1.**) are the 2015 survey responses for the top 10 weeds in agricultural cropping systems in the NCWSS region. “Times Listed” is the number of survey respondents who listed that weed species as one of their top five species.

Going forward, the plan is to conduct this survey every year, but split it into a 3-year rotation. In 2016, the survey will cover weeds in broadleaf crops/fruits/vegetables. 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.

FY 2016 Appropriations

The 2-year budget deal (i.e. the Bipartisan Budget Act of 2015) signed into law in December increased non-defense discretionary spending by \$50 billion over the budget caps agreed to under sequestration that began in 2013. The FY 2016 Omnibus funding bill passed by Congress on December 18 is overall good news for weed research because most of our research and capacity funds are non-defense discretionary spending. USDA-NIFA, -ARS, -APHIS, and -NRCS all got modest increases compared to last

year. Funding for the Army Corps of Engineers’ Aquatic Plant Control Research Program (APCRP), doubled from \$4M to \$8M; however, half of that is slated for new watercraft inspection stations in the Pacific Northwest (as authorized in the Water Resources Reform and Development Act of 2014). The biggest USDA winner was the Agricultural and Food Research Initiative (AFRI) competitive grants program which saw an increase from \$325M to \$350M. USDA funding remained constant to last year’s levels for the Hatch Act (\$244M), Smith-Lever Act section 3(b) & (c) (\$300M), IR-4 (\$11.9M), and Crop Protection & Pest Management (\$17.2M), which includes funding for the Regional IPM Centers and Extension IPM.

WSSA Supports Areawide IPM Bill Introduced in Congress

In November, Rep. Tulsi Gabbard (HI) introduced the Areawide Integrated Pest Management (AIPM) Act of 2015 (H.R. 3893). The bill amends the Integrated Research, Education, and Extension competitive grants program by adding a focus on grants specifically for Areawide IPM. Currently under this section of law, competitive grants are awarded, with such sums as necessary, for Integrated projects as determined by the Secretary in consultation with the National Agricultural Research, Extension, Education, and Economics (NAREEE) Advisory Board. Integrated projects currently funded under this section include Crop Protection and Pest Management (CPPM), the Organic Transitions Program, and

Table 1. Top 10 Agricultural Cropping System Weeds in the NCWSS

Rank	Most COMMON	Times Listed	Rank	Most TROUBLESOME	Times Listed
1	common lambsquarters	82	1	common waterhemp	83
2	common waterhemp	63	2	giant ragweed	61
3	giant foxtail	53	3	common lambsquarters	60
4	velvetleaf	49	4	Palmer amaranth	50
5	common ragweed	42	5	horseweed	48
6t	horseweed	30	6	common ragweed	34
6t	morningglory spp	30	7	kochia	33
8	redroot pigweed	29	8	morningglory spp	32
9	giant ragweed	28	9	velvetleaf	23
10	green foxtail	26	10	giant foxtail	16

the Methyl Bromide Transition program. This bill could be a source of new funding for appropriate areawide weed management projects. USDA already has the authority under existing law to “appropriate such funds as necessary”. The key is build support both at USDA and in Congress for the Areawide IPM concept so that USDA asks for money for these types of projects and then Congress supports that budget request. WSSA is working with Rep. Gabbard and other groups to build support among stakeholders and find co-sponsors in the Senate. Ideally, we’d like to see this language included in the next Farm Bill. Here is a link to Rep. Gabbard’s speech on the House floor and press release introducing the AIPM bill.

Foundation for Food and Agriculture Research (FFAR)

WSSA provided [weed research recommendations](#) to the FFAR Board of Directors on October 30 during their first public stakeholder meeting. FFAR is a new non-profit Foundation that will leverage public and private resources to increase the scientific and technological research, innovation, and partnerships critical to boosting America’s agricultural economy. Congress authorized up to \$200 million which must be matched by non-federal funds as the Foundation identifies and approves projects. The majority of weed science research funding comes from **non-federal sources**. Weed scientists can leverage FFAR funds to help solve pressing agricultural challenges like pollinator and monarch butterfly protection, biofuels production, herbicide resistance, and areawide, aquatic, and organic weed control.

WOTUS- Congress Doesn’t Have 2/3rds Majority to Repeal

The majority of the House and Senate supported legislation (HR 1732; S. 1140) 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.

Following the failed vote in the Senate to invoke cloture and proceed on S. 1140 (57 yea’s, but they needed 60) the Senate adopted a joint resolution (SJ Res 22) which was meant to kill the Administration’s new WOTUS rule. On Jan. 13, the House also adopted SJ Res 22 by a 253-166 vote. The White House has vetoed this joint resolution as well.

The EPA and Army Corps of Engineer’s WOTUS

rule also survived a proposed roll-back in the FY 2016 Omnibus spending bill passed in December, despite the Government Accountability Office’s (GAO) finding that: “*The Environmental Protection Agency (EPA) violated publicity or propaganda and anti-lobbying provisions contained in appropriations acts with its use of certain social media platforms in association with its “Waters of the United States” rulemaking in fiscal years 2014 and 2015.*” See: <http://www.gao.gov/products/B-326944>.

Meanwhile, the Sixth U.S. Court of Appeals just ruled that a federal appeals court rather than a district court was the proper venue to hear challenges to the rule clarifying regulatory reach of the Clean Water Act. The decision affects the 20 challenges to the clean water rule that are consolidated in the Sixth Circuit and an additional 13 challenges that also have been in a holding pattern in federal district courts awaiting the Sixth Circuit’s decision. Now the American Farm Bureau Federation and other industry groups will likely petition the full Sixth Circuit to rehear the question of venue because they supported review at the district courts.

Finally, the American Farm Bureau Federation is publicizing a California farmer’s dispute with the Army Corps of Engineers as a cautionary tale for what could happen if the WOTUS rule is adopted. John Duarte, the California farmer, was issued a cease and desist order by the Army Corps of Engineers for basically plowing his field and planting wheat. The Army Corps of Engineers claimed that Duarte violated the Clean Water Act in “discharging dredge-and-fill materials in a nearby creek,” i.e. plowing, without a permit. For details, see: http://www.fb.org/newsroom/news_article/383/

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

Washington Report - Continued

Environment Public Works (EPW) Committee on Jan. 20. S.659 is expected to get action on the Senate floor in March. Similar legislation in the House called the “Sportsmen’s Heritage and Recreational Enhancement Act of 2015” (SHARE Act, H.R. 2406) was passed on Feb. 26 by a 242-161 vote.

Glyphosate Unlikely to Cause Cancer in Humans

In November, the very cautious European Food Safety Authority (EFSA) concluded that glyphosate is unlikely to cause cancer in humans. The Canadian Pest Management Regulatory Agency (PMRA) also concluded that “the overall weight of evidence indicates that glyphosate is unlikely to pose a human cancer risk.” EFSA stated glyphosate toxicity should be reduced by lessening its dose, but the substance is not likely to be genotoxic or damaging to DNA. These rulings came after the controversial International Agency for Research on Cancer (IARC) ruling last March. The IARC review process has been challenged by many due to a lack of transparency, selective inclusion or exclusion of studies, and broad interpretation of study results that are inconsistent with the conclusions of the study authors. Of more than 900 items IARC has reviewed, including coffee, sunlight and night shift work, they have found ONLY ONE (a material in yoga pants) ‘probably’ does not cause cancer, according to their classification system.

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 and supports the European Commission’s recent decision that it plans to renew a 15-year license for glyphosate. The EU representatives will vote on the glyphosate relicensing on March 7 in Brussels, Belgium.

Concerns on EPA Changes to the Pesticide Applicator Certification and Training Rule

EPA closed the public comment period regarding its proposed changes to the certification and

training standards for pesticide applicators on Jan 23. The changes will have significant costs and impacts on state lead agencies, university extension programs, and the applicators subject to regulatory certification. The proposed rule is complex and includes numerous new, revised, and deleted definitions. Main concerns with the proposed revisions include:

1. Three-Year Frequency for Demonstrating Competency
2. Requirement for Earning Continuing Education Units (CEUs) every 18 months
3. Minimum Age
4. Private Applicator Competency Requirements
5. Impact on General Use Pesticide Applicators
6. Definition of “Use”
7. Definition of “Mishap”



National Invasive Species Awareness Week recap

Volunteers in communities across the nation participated in local events and online webinars during National Invasive Species Awareness Week, which occurred 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 to growers new herbicide chemistry?

Environmentally friendly is a requirement for our new product. It cannot pose a threat to surface waters, ground waters, wild life, 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.'

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Necrology — Aaron Hager

Dr. Loren E. Bode, Professor Emeritus of Agricultural Engineering at the University of Illinois, passed away December 3, 2014 at the age of 71. Although not a member of the North Central Weed Science Society, Dr. Bode's research, teaching, and extension activities in pesticide application technologies had profound influence in the north central region, and were recognized both nationally and internationally.

Oliver George Russ, 94 of Seneca, Kansas, passed away February 25, 2015. He directed research at Kansas State University research centers located at Canton, Newton, and Mound Valley before returning to the Manhattan campus in 1965 to work as an agronomist in weed control research.

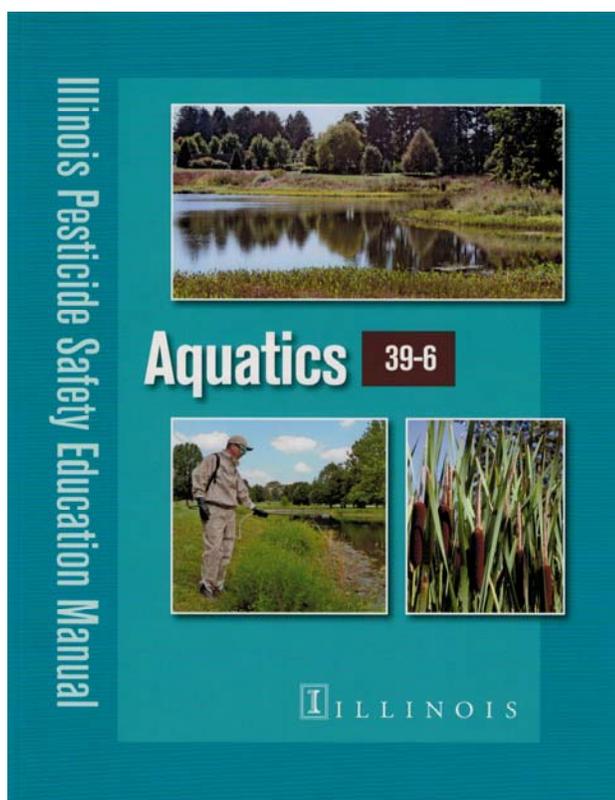
Continued Next Page

Necrology (continued)

Dr. Tom Bauman, Professor Emeritus of weed science at Purdue University, passed away July 11, 2015 at his home in West Lafayette. He was 75 years old. During his professional career, Dr. Bauman was a very active member of the North Central Weed Science Society, including serving as society President in 1994. He became a Fellow of the society in 1996.

James Haven Wojciak, age 69, of Jamestown, North Carolina, passed away November 3, 2015. Jim enjoyed a long career as a technical support specialist with Syngenta Crop Protection, retiring after 30 years with the company.

Other Society News and Publications



Aquatics Manual Revised

We are pleased to announce that the Illinois Pesticide Safety Education Aquatics Manual (SP39-6) has been revised, is back from print, and is now available at the University of Illinois Pesticide Safety Education Program web site, www.pesticidesafety.illinois.edu or from pubsplus.illinois.edu. The cost is \$15 each plus shipping and handling for this 83 page manual. All chapters have been revised, with extensive revisions to the Chemical Application Methods, Equipment, and Techniques chapter. Color photos have been added throughout the manual – many are updates to older black and white ones found in the previous version. Sections on cooling tower algae and harmful algal blooms (HAB) have been included as well as a list of species included in the Injurious Species Code. Aquatic weed prevention outreach and awareness resources have been added. Newer laws that call for properly cleaning boats and trailers and applying for permit coverage to protect water quality are discussed in this revision as well.

This manual was designed to provide information for aquatic managers using pesticides in the management of vegetation and fish. It also serves as a study manual for persons wishing to become certified in Illinois as Commercial or Public Aquatic Pest Control Applicators.

This manual focuses primarily on aquatic vegetation management, but fish control methods and fish kill diagnosis are also discussed. The revised manual contains eight in-depth chapters that address (1) aquatic plants, (2) major aquatic plant groups – their habitats and identification, (3) conditions for aquatic plant growth, (4) nonchemical aquatic plant management, (5) chemical aquatic plant management, (6) chemical application methods, equipment, and techniques, (7) fish population management and (8) diagnosis and prevention of fish-related problems. Much information was added to the text of this revision and in many chapters, the revisions are quite substantial. This publication, printed in November 2015, has an accompanying workbook. Please note the workbook has not yet been updated to perfectly accompany the new manual, so page number references are off a bit. The information found in the workbook is still suitable for use in preparing for the Aquatic Pest Control exam. We will plan to use existing stocks of the January 2006 workbook in our training clinics.

Other Society News and Publications (continued)

Digital Weed Identification Resources from OSU

OSU has developed several digital books that are available for multiple platforms, via iTunes or GooglePlay. Descriptions and links follow – all are currently less than \$10.

The Ohio State University Guide to Weed Identification

This identification guide provides information on the basics of weed identification presented in a considerably updated fashion. It describes 29 families and 83 species of monocotyledonous and dicotyledonous plants. Plant descriptions include key identification characteristics, pictures of the various species at different stages of maturity, and 360-degree movies for most species. This book includes a number of the most common Midwestern U.S. weeds and basic intellectual tools that are necessary to successfully identify plants.

<https://itunes.apple.com/us/book/ohio-state-guide-to-weed-identification/id965990561?ls=1&mt=13>

https://play.google.com/store/books/details/Bruce_Ackley_The_Ohio_State_University_Guide_to_We?id=3ZBqCwAAQBAJ&hl=en

Principles of Weed Ecology and Management

This book, used as a lab manual for the weed science course at OSU, provides information on the basic principles of weed science. It describes 46 families and 100 species of monocotyledonous and dicotyledonous plants. Plant descriptions include key identification characteristics, pictures of the various species at different stages of maturity, and 360-degree movies for most species. This book includes a number of the most common Midwestern U.S. weeds and basic intellectual tools that are necessary to successfully identify plants. Furthermore it provides an introduction or “first exposure” to some basic weed control measures along with offering a basic scientific explanation of how and why various control measures work.

<https://itunes.apple.com/us/book/principles-weed-ecology-management/id953632085?mt=11>

https://play.google.com/store/books/details/Bruce_Ackley_Principles_of_Weed_Ecology_and_Manage?id=l2xNCwAAQBAJ&hl=en

Identifying Noxious Weeds of Ohio

This identification guide provides technical descriptions and photos for Ohio’s 21 invasive and noxious weed species. These descriptions include information on habitat, life cycle, key plant characteristics, and a summary of problematic features. Photos included in this guide present the weed species at different stages of maturity for optimal identification aid. This book also provides information on Ohio’s noxious seed law, extension guides to weed control, and a quick guide to weed regulations in Ohio law.

<https://itunes.apple.com/us/book/identifying-noxious-weeds/id1018434281?ls=1&mt=13>

<https://books.google.com/books/about?id=79iECwAAQBAJ>

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Lab Manual



ID Guide



Noxious Weed Guide



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Tiered sponsorships, as well as these opportunities (and more) for sponsorship are still available: Coffee breaks, breakfasts, lunches, welcome reception, poster session, the proceedings publication, symposium app, and an interesting array of ag field trips.

For further information on ISAA 2016, contact

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