

NCWSS • News

North Central Weed Science Society

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Greg Dahl President's Message

I thank you all for the opportunity to serve as your 2017 president. It has been a pleasure to serve the North Central Weed Science Society and its members. I am very impressed with the willingness of the people that volunteer and serve. It is our members that make the NCWSS successful. If you would like to serve on a committee or have suggestions on how we can improve the society please email me at gkdahl@landolakes.com.

There will be many challenges for Weed Science in 2017. We will get another opportunity to do research, teach and battle herbicide resistant weeds and invasive plants. 2017 will introduce new technologies that will offer robust weed control possibilities but require care and stewardship to obtain the benefits but minimize damage to non-target organisms. We will continue to try to provide practical and economical solutions. For our industry members there are many distractions and uncertainty from consolidations that are in progress. For our public members there are serious threats to adequate funding. The NCWSS is committed to advocating for the resources needed to pursue the strategies and technologies needed to manage weeds to minimize losses and keep agriculture productive. Thank you for your efforts.

Thank you to Phil Banks. Welcome Tara Steinke. I would like to thank Phil Banks for his great service as Executive Secretary to the North Central Weed Science Society for these many years. I have always appreciated his help, suggestions and reminders. We wish him the very best.

I would like to welcome Tara Steinke as our new NCWSS Executive Secretary. She is already hard at work and doing great things. Her contact information is listed in this newsletter and on the NCWSS web site. Please feel free to contact her to welcome her and if you have needs or questions.

2017 NCWSS Weed Science Contest:

The 2017 NCWSS Weed Science Contest will be at the Iowa State University Field Extension Education Laboratory on July 27, 2017. Thank you to Warren Pierson and the entire committee for hosting and



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

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President message — continued

putting on the Weed Science Contest. They will put on a great contest and I am looking forward to it. I would also

like to thank the Mayank Milak, Mark Bernards and the Resident Education committee for working to update the rules for the various contests including the Summer Weed Science contest.

NCWSS Annual Meeting 2017.

The NCWSS Annual Meeting will be in St. Louis, MO at the Hyatt Regency at the Arch on December 4-7, 2017. President-Elect/Program Chair, Christy Sprague and Greg Elmore Local Arrangements Committee Chair, are making preparations for the NCWSS 2017 Annual meeting. Christy is the Program Chair this year and I know she will organize a wonderful program. If you have ideas for a symposium, please let Christy know. Greg has put together a fine Local Arrangements committee. The hotel is a great location for our meeting. Greg and his committee will host a great meeting.

Reflections on the 2016 NCWSS Annual meeting.

I hope you enjoyed the 2016 NCWSS Meeting and found it valuable. I was pleased by the parts of the meeting that I was able to participate in. I am grateful and thankful to the many people that helped for their considerable efforts at the meeting. My Sincere thanks to:

Mike Owen and the Local Arrangements Committee are to be commended for hosting a great meeting. I commend him and them for their organization, timing, capabilities, attention to all of the details and team effort. It was truly and honor to serve with them.

Phil Banks for his organizational skills, suggestions and prodding. Also for putting together the written program, and the multitude of details to run a meeting and organization smoothly.

NCWSS 2016 President, Anita Dille and NCWSS 2015 President, John Hinz for their service, leadership, suggestions and support. They have both served the NCWSS admirably. I also appreciated the help from

many of the NCWSS presidents that had preceded them.

The Site Selection Committee selected an excellent location and made great arrangements for the 2016 meeting.

Rebecca Lorsch and the Des Moines Marriott Downtown Hotel meeting staff for their commendable service.

David Krueger for his help putting together the 2016 printed program and his help with programming the 2016 NCWSS Meeting App.

Dawn Refsell and the Strategic Planning Committee for suggestions to improve the meeting and society. Dawn was very helpful in programming the 2016 Meeting App.

All of the Program Committee Members, Presentation Recording Committee, Committee Chairs, Vice-chairs and Members for their valuable service.

Joe Omielan and the other people that took pictures so that we can enjoy the meeting again. Thanks for this important service to the society.

Dave Johnson and DuPont Crop Protection for hosting a pre-

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**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

meeting event and tour of their facilities for the NCWSS Student members. I heard very good comments from many of the students.

BASF Corporation for hosting the **BASF Student Mixer and Quiz Bowl Event** on Monday night. This was such a fun event to get the meeting started off with.

David Simpson and Dow AgroSciences for hosting the Graduate Student Luncheon and meeting on Tuesday at noon. I also heard very good comments from students.

General Session Speakers.

Bill Northey, Iowa Secretary of Agriculture and Land Stewardship welcomed us to Iowa.

Dermott J. Hayes, Pioneer Chair in Agribusiness, IA State University for his keynote message “Bridging to Better Times”.

Lee Van Wychen for his “Washington, D. C. Report

President Anita Dille for her “Presidential Address”.

Aaron Hager for “Remembering Former NCWSS Members and Friends”.

The Poster Session Committee, David Hilgers, Chair and Paul Marquardt, Vice-Chair, the Local Arrangements committee, the Resident Education committee, all of the poster judges and participants. The poster sessions were excellent. Congratulations to the Graduate and Undergraduate poster winners.

Paper Session Moderators, The Resident Education Committee and all paper judges and participants. Thanks for your hard work and service. Congratulations to the Graduate paper winners.

President Anita Dille hosted the “Women in Weed Science Networking Breakfast” on Wednesday morning. Marji Alaniz, Founder and President of FarmHer, Inc. was the guest speaker for this event. About 50 members attended this event.

Amit Jhala and the speakers at the “Public Issues and Communication Issues Symposium. This symposium was popular and well attended. **Arlene Cote** discussed “Stewardship: What is our Role?”

Meaghan J. Anderson presented “Palmer Amaranth: Uninvited Guest to Conservation Plantings”.

Kevin Bradley presented “A Season to Remember: Our Experiences with Off-Target Movement of Dicamba in Missouri”.

Lee Van Wychen discussed “Science Policy Outlook for 2017”.

Mike Barrett presented “Regulatory Challenges to the Continued Availability of Herbicides and their Utility”.

Brandy Tannahill discussed “Millennials in Agricultural Industry”.

Andrew Kniss discussed “Experiences and Impressions Using New Technology and Methods in Weed Education and Outreach”.

Everyone that helped with the Awards

Luncheon for their service to the NCWSS Society. It is important that we recognize our members for their accomplishments. Congratulations to all of the Award Winners.

Travis Legleiter and the Speakers of the “New Technology Presentations.

This symposium was also popular and well attended. Application technology is changing quickly and this symposium provided much new information.

Travis presented an “Overview to New Technology.

Orlando Saez presented “UAS Data Analysis and Outcomes: Best Practice and Use Cases”.

Eric Patterson presented “Applying New Molecular Techniques to Address Issues Related to Herbicide Resistance, Invasive Species and the Genetics of Non-Model Organisms.

Joel Wipperfurth discussed “Technology and Intelligent Weed and Farm Management”.

Bruce Bode, Pentair Hypro presented “Maintaining Spray Droplet Uniformity with New Spray Technologies”.



President message — continued

Kevin Humke, TeeJet Technologies presented “New Spray Nozzle

Developments from TeeJet Technologies”.

Will Smart, Greenleaf Technologies presented “Maximizing Coverage with Low Drift Nozzles”.

Al Harmon, Greenleaf Incorporated presented “Greenleaf Incorporated Technology Presentation”.

Steve Claussen, Willmar Fabrication Inc. presented information about spraying equipment and shielded sprayers.

Brian Finstrom, CapstanAG presented “Benefits of PWM Spray Systems for Production Agriculture and Research”.

Paul Marquardt and All of the Sustaining members for their presentations at the “What’s New in Industry” Symposium. Thanks also to the Sustaining members for their support of NCWSS, special thanks to the Sustaining members that brought exhibits to the meeting to share with us.

Thanks to Paul Marquardt, Stott Howard and the Industry Committee. Paul lined up a great presentation for the Industry Breakfast. Rodney Williamson, Director of Research and Development, Iowa Corn Growers Association presented “The Des Moines Waterworks Lawsuit”. I learned much from his presentation.

Stott Howard paid for breakfasts for students that attended the breakfast. Thanks for the generosity.

To everyone that used the 2016 NCWSS App. Thanks, it was a valuable experience for me to work with the meeting App. I appreciate everyone that helped. It was fun to see how many people were using it and what they were doing with it. There were 273 people that downloaded the App for the meeting. I hope you liked it.

Sincerely
Greg Dahl, President
gkdahl@landolakes.com
651-261-1817



Past President — Anita Dille

Thank you for the opportunity to serve as your North Central Weed Science Society President in 2016. I truly enjoyed my time providing leadership to our organization and in getting to know our members. The NCWSS

serves as an important professional scientific organization, sharing our expertise in all aspects of weed management, across numerous production systems, for the North Central region.

I believe that the culture of our NCWSS is one of friendliness, inclusiveness, family-like values, and respect. As I stated in my Presidential Address at the opening of our 71st annual meeting in Des Moines, IA, it is like a ‘family reunion’, where we can gather together and renew acquaintances after a year’s absence, and easily meet new people and

share ideas. The NCWSS is also a professional organization that expects appropriate professional behaviors among the attendees, throughout each session, and in every social activity. We are an organization of volunteers and everyone’s contributions are critical for our society’s success. The opportunity to share our science in a supportive environment is very important. NCWSS members were upset and provided feedback to me about unprofessional conduct during the meeting. The Board of Directors heard these concerns, provided feedback to those specific members about the issues, and apologies for the conduct accepted.

I would like to sincerely thank our Executive Secretary, Phil Banks, for all of his contributions and service to the NCWSS. I would also like to welcome our new Executive Secretary, Tara Steinke, with IMI Group in Westminster, CO as she takes on the leadership for the NCWSS.



Past President message — continued

Many thanks go to Greg Dahl, our new NCWSS President, for his leadership in developing the NCWSS program in 2016. Greg promoted the use of the Guidebook App to supplement our program booklet for our annual meeting, and I could see many folks using it. Greg also guided the offering of a new event, the New Technology Showcase, together with Travis Legleiter, that brought in numerous companies and presenters that have not been in attendance in a long time. Many thanks to Mike Owen and our Local Arrangements Committee in Des Moines, together with our Executive Secretary, for organizing such a smooth running meeting. Thanks to Dow AgroScience for sponsoring the graduate student luncheon. Thanks to Paul Marquardt for organizing the What's New in Industry session and the Industry Breakfast. The combined Extension section and symposium entitled Public and Communication Issues was chaired by Amit Jhala. Many, many thanks to all the volunteers that serve on committees, volunteered to judge student videos, posters, and papers, to chair and moderate sections, and to help with the summer weed contest. Volunteers are critical for having a successful NCWSS organization.

Congratulations to all the 2016 NCWSS Distinguished Achievement Award winners, new Fellows, student travel grant winners, and student video, poster, and oral presentation award winners. My priority in 2017 will be to solicit nominations for these awards. Start thinking of deserving individuals that should be recognized by their peers in the NCWSS. The nomination process is not difficult, and information is included on our web site. More information will be included in the summer newsletter, with a nomination due date in September 2017!

Finally, I would like to thank the NCWSS Board of Directors for all their contributions. I would like to recognize John Hinz who has served the NCWSS in many ways, most recently in the presidential rotation over the past four years. The leadership of the board is now in the capable hands of Greg Dahl and I look forward to a great year!

Sincerely,
Anita Dille, Past-President.



Distinguished Awards 71st Awards Luncheon



PROGRAM

- Master of Ceremonies..... Mike Moechnig
- Graduate Student Paper Awards..... Mayank Malik
- Graduate Student Poster Awards..... Neha Rana
- Undergraduate Student Poster Awards.....Mark Bernards
- Outstanding Graduate Student Award..... Anita Dille
- Fellows Duane Rathmann
- Presentation of New Officers Anita Dille



Industry Richard Cole

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.

Dr. Richard (Rick) Cole did not grow up in an agricultural area, but he has brought much to agriculture from his life's work that began when, as a Master Degree student in the Biological Science Department at the University of Kentucky, students from the Weed Science group came to his lab to investigate mechanisms of action of diphenyl ether herbicides. After graduation with a MS in Biology in 1979 and a year with the University of Kentucky Medical Center, he took a research position with the Weed Science team under Dr. Bill Witt, followed a year later with enrollment in the Weed Science PhD program. After his PhD degree in Crop Science in 1985, Rick went to work as a Field Specialist with PPG industries, in Mahomet, IL. His primary function was evaluation of new compounds and sales support of commercial products. In 1988 he was uprooted when Chevron purchased PPG and joined with Sumitomo Corporation to form Valent, USA. Rick moved to Walnut Creek, CA and worked through successive roles in Regulatory Science, Contract Research Management and Corporate Strategy and Planning. After 8 years, he

returned to the Midwest and joined Monsanto Company in 1996 as a Technical Services Manager, responsible for the technical management of all acetanilide products globally, with a focus in the U.S. He transitioned to a newly created role of Technology Development Manager, focused was U.S. products, including Crop Protection products and new com traits, such as the YieldGard brands.

Rick also led the development and launch efforts for a new encapsulated com acetochlor herbicide, branded as Degree. The product was transformational in that the encapsulation technology had not been used before in agriculture and provided a new level of crop safety. This safety allowed for use in soybeans and cotton, where previously acetochlor had been considered too damaging to the crop. Even though he met internal opposition to the product, he convinced management that this would be an advantage for growers and subsequently became a significant tool to manage weed resistance.

As weed resistance issues developed, Rick took the lead for the technical teams at Monsanto to address the issue from a company and grower viewpoint. First and foremost was driving change in Monsanto from previous positions on weed resistance, which were not sustainable, and development of tools to help provide weed management solutions for growers. The most significant commercial tool became Roundup Ready PLUS Weed Management Solutions platform.

Rick led the Monsanto efforts with academic engagement on resistance issues, providing leadership and funding for the 6 year Benchmark Study, culminating in dozens of presentations, position papers and peer-reviewed articles authored by team academics. Rick was the face of Monsanto for numerous media inquiries about weed resistance, including interviews with ABC News, NHK in Japan, Iowa Public TV, various radio shows and news articles in the U.S. and abroad.

During the final five years of his career, he led the Crop Protection Technology Development Manager team, which was responsible for development, technical leadership and support of all Crop Protection products in the U.S. Late in his career, he also engaged as a key member of various regulatory and strategy teams for new products. Rick and his spouse of 34 years live in the St. Louis area, where they enjoy the pleasures of living in a lake community. Both children, Allison and Logan, are married and enjoy the benefits of having a retired father.



Industry Mark Peterson

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.

Dr. Mark Peterson was raised on a crop and livestock farm in southeastern South Dakota and received a B.S. in Agronomy from South Dakota State University. He continued his advanced degrees at SDSU while working as a Technical Assistant on the herbicide screening project, and received a Ph.D. in Agronomy (Weed Science) in 1987. While at SDSU Mark met and married his wife Angela, and they later added a daughter, Amanda, to the family. Mark joined Dow Ag Products in 1988 as a Field Technical Services and Development Representative covering North and South Dakota. In this position he conducted research and provided sales support across all products for corn, soybeans, small grains, sugar beets, oilseeds, and rangeland/pasture in the northern Great Plains.

In 1996 Mark moved to western Illinois where he managed the Dow AgroSciences Geneseo Research Station. While there, he was also part of a team that built Dow AgroSciences' Midwest Research Station near Fowler, Indiana. In 1998, he moved to West Lafayette, Indiana to consolidate Midwest field station capabilities at the Fowler site and manage the facility. Later, he became Product Technology Business Partner, managing the Field Science Organization for U.S. Northern Crops as well as Range and Pasture/Industrial Vegetation Management. From 2008 through 2015, Mark was the Global Biology Team Leader for the Enlist™ Weed Control System, coordinating field characterization of Enlist corn, soybeans and associated herbicide concepts in North America and Latin America. In 2015 he became Global Product Development Leader for corn and soybean herbicides as well as nitrogen stabilizers. Mark currently chairs the Global Herbicide Resistance Action Committee (HRAC), a cross-Industry group dedicated to addressing herbicide resistance issues and ensuring the long-term viability of weed control tools. At Dow AgroSciences he has regularly interacted with journalists and the media to discuss issues related to herbicides, resistance, and the importance of pesticides in modern crop production. In the last several years, Mark has authored or coauthored several publications related to herbicide tolerant crops, herbicide resistance, and recently a review of 2,4-D.

Mark has been an active member of the NCWSS and WSSA since 1980, serving on various committees, judging paper and poster contests, organizing symposia, and supporting the annual NCWSS weed science contest. Mark loves the outdoors and is a member of the Nature Conservancy, Pheasants Forever, and Ducks Unlimited. Someday he hopes to devote more of his time toward conservation causes and improving wildlife habitat.



Industry Larry H. Hageman

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.

Dr. Larry Herman Hageman grew up on a dairy farm near Naperville, IL. While growing up, he was extremely active in 4-H club work in DuPage County and showed purebred Berkshire hogs and vegetables and grain at many fairs. Larry won the 1974 National 4-H Poultry Judging Contest and his oral reasons score set a record that stood for many years. For his 4-H activities, he was presented with the highest honor for 4-H Leadership, the presidential silver tray, by then President Gerald R. Ford in 1975. His parents nurtured his interest in agriculture, gardening and plant science as they continued farming, milking cows and raising crops and exhibiting grain, forages and vegetables at many county and state fairs. They, along with his 4-H and Youth County Extension advisor, John Bushman, strongly encouraged him to consider the University of Illinois for college and he applied to only one college upon finishing high school.

He earned his undergraduate degree in Agricultural Sciences with Honors from the University of Illinois in 1978. He was especially active while on campus in the Field and Furrow Agronomy Club, the Alpha Zeta Agricultural Honorary and the National Student Activities Subdivision of the American Society of Agronomy (SAS-ASA). Upon graduation, Larry enrolled in the University of Minnesota's College of Food, Agricultural and Natural Resources Sciences as a graduate assistant and completed both a Master's degree in Crop and Weed Science at the University of Minnesota in 1980 and a Ph.D. degree in Plant Physiology at the University of Minnesota in 1982.

Upon graduation, he immediately joined DuPont as a research biologist in herbicide discovery within the Crop Protection Division at Stine Haskell Laboratory. Larry later moved into Field Product Development and has enjoyed a long professional career in this area that has spanned 34+ years. He currently serves as Field Station Manager in Rochelle, IL. He was co-inventor of Muster® herbicide, a weed control material for use in the control of broadleaf weeds including wild mustard within an oil seed crop, canola. Larry was involved in the first field evaluations of Accent herbicide for postemergence use in corn. Research in the crop protection field is a joy and a passion of Larry's and he especially enjoys interacting and keeping in touch with the over 175 college student interns that he has mentored over the years. Many of these former interns have gone on to achieve very successful careers in the agricultural field.

Larry has been a member of the North Central Weed Science Society (NCWSS) since 1979. He has presented or co-authored over twenty oral presentations and posters at the annual NCWSS meetings. Larry has served as the industry representative on the board of directors and as student paper and poster contest judge. He was a participant in the first NCWSS Collegiate Weed Science contest. He is also member of the American Society of Agronomy (ASA), the Crop Science Society of America (CSSA), and the Weed Science Society of America (WSSA). Larry is also a Life Member in the University of Illinois and Minnesota Alumni Associations. He was presented with the Award of Merit from the College of ACES at the University of Illinois in 2014 for his involvement with the College, tireless fundraising and mentoring of students. Growing up and living on a family dairy farm instilled the values of farm life in Larry: hard work, discipline and responsibility and he applies these traits to all his interests.



Service Stott Howard

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.

Dr. Stott Howard is presently the R&D Head of Syngenta's Heartland Region where he is a member of a team focused on the development and characterization of pest control technology. During his 26 year tenure with Syngenta Stott has filled many roles ranging from a bench scientist working with chemists on the discovery of new herbicides to a global technical manager responsible for developing strategies for corn, cotton and soybean herbicides. Prior to joining Syngenta Stott was an extension weed scientist for Washington State University. Stott's alma maters include Utah State University (B.S., M.S.) and Washington State University (Ph.D.) Go Cougs!

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.

Dr. Amit Jhala completed his BS (Agriculture) and MS (Weed Science) from Gujarat Agricultural University, India. He was selected for an international fellowship sponsored by the Belgian government and spent a year at Ghent University, Belgium, during which time he visited several universities in Europe. Amit completed his Ph.D. from the University of Alberta, Canada in 2009, after which he completed postdoctoral experiences at the University of California-Davis and the University of Florida.

Since August 2012, Amit has served as a weed science faculty member at the University of Nebraska-Lincoln (UNL) with a split appointment between research and extension. Amit's research program at UNL is focused on the biology, gene flow, and management of herbicide-resistant weeds, through which he is specifically interested in pollen-mediated gene flow from herbicide-resistant crops and weeds. His paper published in *Heredity* (a journal of the Nature Publishing Group) about gene flow was not only recognized by the journal, but the paper led to a commentary published in the same issue of *Heredity* discussing the statistical methods used in the study to determine the minimum sample size needed to detect gene flow. Amit is an early career scientist with 61 papers published/accepted in peer-reviewed journals, of which he is the first or senior author on 48. Additionally, he has published 11 book chapters. Amit has graduated two MS students and a Ph.D. student



Young Scientist Amit Jhala

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Young Scientist cont. Amit Jhala

at UNL, in addition to supervising two Ph.D. students and two MS students as a major advisor and serving as a committee member for four other weed science graduate students.

Amit has developed a weed science extension and outreach program in the state of Nebraska that promotes a more sustainable corn and soybean production system by teaching the principles of safe and cost-effective weed management, primarily through the management of glyphosate-resistant weeds. Amit is a coordinator of the Crop Production Clinics (CPCs), the largest Extension program in the Nebraska Extension system. On average, 1,500 to 1,800 clientele attend CPCs across nine locations in Nebraska annually, many of whom obtain pesticide recertification through CPCs. Amit also organizes Corn and Soybean Weed Management Field Days and Herbicide-Resistant Weed Management Field Days attended by 100 to 150 clientele every year. In addition, Amit serves on the Board of Directors for the NCWSS as the Chair of the Extension Section and serves on several committees of WSSA.



Outstanding Graduate Student Travis Legleiter

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.

Travis Legleiter, is a PhD candidate in the Botany and Plant Pathology Department at Purdue University under the direction of Dr. Bill Johnson. Travis' dissertation research involves the investigation of best management recommendations of growth regulator-tolerant cropping systems, including the evaluation of herbicide deposition with low drift broadcast nozzles. Travis also fills the role of Weed Science Program Specialist within same department at Purdue. This position focuses on establishing and maintaining a link between the Weed Science Extension program and Indiana producers and industry stakeholders through press releases, public presentations, personal communication, and web technology.

Travis was born and raised on a small row crop and beef cattle farm in Nevada, MO; where his interest in agriculture was developed. He obtained a BS in Plant Science with an emphasis in Crop

Management at the University of Missouri in May of 2006. He earned his MS in Plant, Insect, and Microbial Science in 2008 at the University of Missouri under the direction of Dr. Kevin Bradley, where he conducted his thesis research on glyphosate-resistant common waterhemp. Travis is expected to graduate from Purdue in May 2017.



Fellow Award Curtis Thompson

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.

Dr. Curtis Thompson is a Professor of Weed Science at Kansas State University. Curtis has been an active member of NCWSS since 1993 but first attended NCWSS in 1982 at Indianapolis. He is also a member of WSSA, IWSS, and WWS. Dr. Thompson has been a member of CAST since Steve Miller encouraged NCWSS member's participation. He has served as NCWSS CAST representative, Kansas Board Director and has served on several committees including Resident Education (worked through the sequence including Chairman),

Herbicide Resistance Committee, Poster Session committee, Agronomic Crops II Chair. He has served on several committees for the WWS as well. He has moderated many sessions over the years at NCWSS, WWS, and at the American Society of Agronomy (ASA) meetings. He has served as Chair of the Extension Education Division for ASA and received .. an ASA Fellow in 2014. In 2005 Dr. Thompson received a Distinguished Achievement award for service from the NCWSS. In

2011 he received the Excellence in Extension Award for Gamma Sigma Delta. Dr. I- Thompson assumed duties of Extension Weed Science in the K-State Agronomy Department in April of 2008 with a focus on weed management in field crops. Prior to that appointment, he was a K-State Area Agronomist for Southwest Kansas. In addition, Thompson serves as K-State Extension Agronomy Program Leader. Dr. Thompson has a B.S. and M.S. degree from North Dakota State University and was awarded the Ph.D. from the University of Idaho.

Dr. David Simpson is the Global Biology Team Leader for Enlist com and soybean with Dow AgroSciences, where he is responsible for the characterization of Enlist weed control systems and herbicide tolerance of Enlist com and soybean in North America and Latin America. He currently resides in Indianapolis, IN. David grew up near Houston, Texas and received his BS in chemistry from the University of Houston. While in college, David worked for at Exxon Chemical where he was encouraged by numerous Exxon scientists to pursue graduate school resulting in him pursuing a MS in weed science at Texas A&M. On the advice of his major professor, Dr. Morris Merkle, David left the warm south and headed north to Illinois where he received his PhD in weed science at University of Illinois under Dr. Ed Stoller.

Upon graduation, David joined Dow AgroSciences as a field scientist in Minnesota where he spent 3 years learning to enjoy the long winters and short summers. In 1998, David relocated to Greenville, MS to become the field station leader at Dow AgroSciences Coastal U.S. Research Center where he guided research on new herbicides, insecticides and fungicides in rice, com, soybean, cotton and numerous vegetable crops. Then in 2001, David relocated to Indianapolis, IN where he led projects associated with improving research databases. He also served as Product Characteri-



Fellow Award David Simpson

Fellow Award Cont. David Simpson

zation Leader for development of new herbicides, Zonal Biology Team Leader, and field research scientist for herbicide traits before assuming his current role in 2014.

Over the course of his professional career, David has had the opportunity to be actively engaged in the development of cloransulam,

cyhalofop, penoxsulam, Arylex, SureStart, Resicore, Enlist Duo, Enlist com, and Enlist soybean. In recent years, David has arranged for sponsoring multiple graduate student projects and served on graduate student committees. David first attended the NCWSS meetings in 1991 and has been an active member of the society as graduate student and industry scientist. As a graduate student he participated in paper, poster and summer weed contest culminating in winning the "triple crown" in 1993. He has authored or co-authored over 35 papers and posters at NCWSS plus 15 at SWSS and 14 at WSSA, has volunteered many years as a judge of student paper and poster contests and for the summer weed science contest, has served on various committees. He has authored over 12 peer reviewed scientific publications in the area of weed science. David has served as the Secretary Treasurer of the Society since 2012. David is a member of Southern Weed Science Society, Weed Science Society of America and U.S. Herbicide Resistance Action Committee.



Student Paper & Poster Presentation Awards

There was excellent participation with 47 graduate student papers, 47 graduate student posters, and 13 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 (Mark Bernards, undergraduate posters; Maynak Malik, graduate papers; and Neha Rana, graduate posters). Thanks again to everyone who participated in the contests.

Proceedings and recordings of all 2016 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 Mayank Malik)

Agronomic Crops I



Evaluation of 2,4-D, Dicamba, Glyphosate, and Haloxifen-methyl Tank-mixtures on Broadleaf Weeds.

Marcelo Zimmer. Purdue University



Effect of Single Mode of Action Post-emergence Herbicides on Severity of Goss's wilt in Corn.

Joseph T. Ikley. Purdue University

Graduate Student Paper Contest (continued)

Agronomic Crops II



1st

Investigating the Potential Effects of Pre-emergence Residual Herbicides and Seed Treatment in Soybean.

Blake R. Barlow. University of Missouri



2nd

Integrating Soybean Row Width and a Cereal Rye Cover Crop to Manage Glyphosate-Resistant Palmer Amaranth.

Kelsey M. Rogers. Michigan State Univ.

Weed Biology, Ecology, Management



1st

Do ALS-inhibiting Herbicides Have Any Value When Targeting Fields with Weeds Resistant to Those Herbicides?

Jodi E. Boe. Purdue University



2nd

Efficacy of PRE and POST applied Dicamba on Dicamba-Resistant Kochia.

Junjun Ou. Kansas State University

Weed Biology, Ecology, and Equipment Application Technology



1st

Evaluation of Drift from a Field Application of Enlist Duo™.

Matthew R. Nelson. University of Nebraska



2nd

Equipment and Cleaning Agents Influence Dicamba Rinsate Damage to Soybeans (*Glycine max*).

Andy J. Luke. University of Missouri

Graduate Student Paper Contest (continued)

Herbicide Physiology



1st

Multiple Resistance to Chlorimuron, Fomesafen, and Glyphosate in Palmer Amaranth from Indiana.

Douglas J. Spaunhorst. Purdue University



2nd

How Much does Horseweed (*Conyza canadensis*) Height or Developmental Stage Influence the Efficacy of Halauxifen-methyl, Dicamba, and 2,4-D?

Cara L. McCauley. Purdue University

Graduate Student Poster Contest (Chair Neha Rana)

Agronomic Crops I



1st

Efficacy of Variable Rate Soil-applied Herbicides Based on Soil Electrical Conductivity and Organic Matter Differences.

Garrison J. Gundy. Kansas State University



2nd

Preharvest Herbicide Effects on Winter Wheat.

Kelsey M. Rogers. Michigan State Univ.

Agronomic Crops II



1st

Efficacy of Halauxifen-methyl Herbicide Programs for Management of Glyphosate-resistant Horseweed (*Conyza canadensis* L.) in Soybean.

Marcelo Zimmer. Purdue University



2nd

Palmer Amaranth Control in Double Crop Dicamba -Glyphosate-Resistant Soybeans.

Nathaniel R. Thompson. Kansas State Univ.

Graduate Student Poster Contest (continued)

Application Equipment and Extension



1st

Which Factor Influences Dicamba Volatility the Greatest: Soil, Foliage or Adjuvant?

Jamie L. Long. Purdue University



2nd

Application Timing of PPO-inhibitor Herbicides Influences Level of Palmer Amaranth Control.

Larry (Joey) Rains. Kansas State Univ.

Herbicide Physiology and Weed Biology & Ecology



1st

Droplet Size and Deposition of Glyphosate and 2,4-D Drift in a Wind Tunnel.

Matthew R. Nelson. University of Nebraska



2nd

Antagonistic Effect of Glyphosate and Dicamba Tank-mix on Kochia Control.

Junjun Ou. Kansas State University

Weed Biology, Ecology and Management



1st

Seasonal Changes in Forage Quality of Common Pasture Weeds in Missouri.

Zach L. Trower. University of Missouri



2nd

Understanding Gender Determination In Dioecious Amaranthus Weeds.

Ahmed Sadeque. University of Illinois

Undergraduate Student Poster Contest (Chair Mark Bernards)

Weed Biology, Ecology and Environmental Effects



1st

Determining At-harvest Seed Retention of 3 Problematic Weed Species in Soybean.

Drake J. Gleeson. University of Missouri



2nd

Coevolution of Resistance to PPO Inhibitors in Palmer Amaranth and Waterhemp.

Kathryn J. Lillie. University of Illinois

Herbicide Efficacy and Application Technology and Methods



1st

Response of Waterhemp Populations from Nebraska to Soil Applied PSII and PPO Herbicides.

Felipe Faleco. University of Nebraska



2nd

Effects of Clethodim and Dicamba Tank-mixtures on Control of Volunteer Corn (*Zea mays*) and Grain Sorghum (*Sorghum bicolor*).

Isidor Ceperkovic. University of Nebraska

Undergraduate Scholarship Award



**Lucas Roberts
Iowa State University**

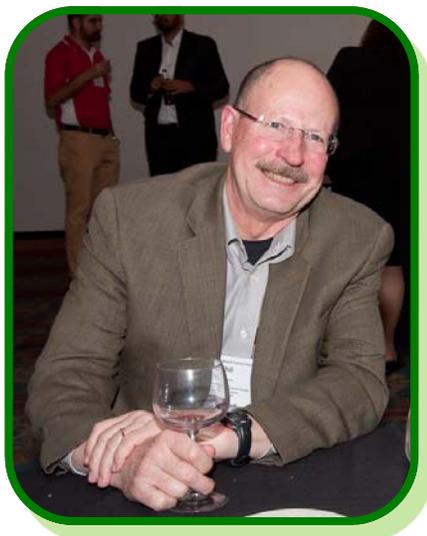
The Undergraduate Scholarship Award

This award consists of free meeting registration and hotel accommodations for the annual NCWSS meeting. This award is presented to the overall high scoring undergraduate individual student competing in the previous Summer Weed Science Contest. The 2016 overall undergraduate weed contest winner was Lucas Roberts.

Congratulations Lucas.

Executive Secretary “Out with the Old, In with the New”

Easy Phil.....we know you're not 'old'.



It has been said many times, and it is referenced in many individual Presidential and Past-Presidential updates, but let it be resolved the entire NCWSS membership is very thankful to have had the leadership and organization that Phil Banks brought to our society for many years. So thank you very much Phil, and the Society will forever be indebted for your service and membership.

Please enjoy all the new challenges you will accept in the near future, and don't forget to come back every December and share your “NOT retirement” adventures!

THANKS PHIL

New Executive Secretary



My name is Tara Steinke and I am the new Executive Secretary for the North Central Weed Science Society. I work for IMI and our office is in Westminster, CO. We at Interactive Management Inc. (IMI) are excited about serving the members of the NCWSS! If there is anything we can do to assist you please let us know. Our office hours are M-F, 8:00 am – 5:00 pm MST, the phone number to get ahold of us is (303) 327-8016 and the email is info@ncwss.org.

If you have changed jobs, have a different address or different email address, please log onto your profile on the website (<http://ncwss.org/member-login/>) and update your information. If you have any issues logging on please do not hesitate to give us a call.

Mark your calendars for the Student Weed Contest on July 27, 2017 and for the Annual Meeting in St. Louis, MO on December 4-7, 2017.

I will leave you with this: Get involved, and encourage others to get involved in NCWSS!

“As a business model and a core value, membership is perhaps the defining quality of nonprofit trade associations and professional societies. And it's more than just a bundle of benefits. To join an association is to become a member of a community, a place to belong, where like-minded people share knowledge and work together toward goals they couldn't achieve alone. The ASAE study *The Decision to Join* found that the human desire for belonging remains strong, and members join associations equally motivated to improve themselves and their industries or communities.” (<https://www.asaecenter.org/resources/topics/membership>)

If you would like to become more involved in the NCWSS, a great way to do this is to join a committee. Contact NCWSS President Greg Dahl, gkdahl@landolakes.com to get more information.

2016 Summer Weed Science Contest



The 2017 NCWSS Collegiate Weed Contest will be hosted by Iowa State University at the [Field Extension Education Lab](#) near Boone, IA on July 26-27, 2017. The Field Extension Education Lab is a training facility with hands-on demonstrations designed to improve student's and crop advisor's diagnostic skills and crop management knowledge.

This year's Collegiate Weed Contest will consist of a written sprayer calibration, hands on sprayer calibration, weed identification, unknown herbicide identification, and farmer problems.

Registration will close on June 30th. To volunteer as a judge or help with other parts of the contest please answer the questions at this [link](#).

We have reserved a hotel block at the [Holiday Inn Ames Conference Center at ISU](#) under the event name NCWSS for the nights of July 26th and 27th. **Please reserve a room by calling (515) 268-8808 by July 5th** to receive the discounted block rate. An awards banquet will also be held at the Holiday Inn Ames Conference center on July 27th following the competition. Other nearby hotels that may be options include the Gateway Hotel and Conference center and the Best Western Plus University Park. For more details about the 2017 contest including rules and [directions to FEEL](#) go to the [Weed Contest page](#).

If you have more questions contact Warren Pierson (wpierson@iastate.edu) or John Hinz (john.hinz@bayer.com).



New ASA-WSSA Liaison

Hello, my name is **Stephanie Wedryk**. I wanted to introduce myself as the new ASA-WSSA Liaison. My term began in January 2017 and will end in December 2019. In this role, my main duties are to attend meetings of both societies, facilitate communication and provide support for causes of interest to both societies. I missed out on the regional weed science meetings this year as well as the WSSA meeting in Tucson, AZ. Hopefully I will see some of you at the ASA-SSSA-CSSA meeting October 22-25 in Tampa, FL. I will also be attending the North Central Collegiate Weed Contest on July 27 and Ames, IA, and the North Central Weed Science Society Meeting December 4-7 in St. Louis, MO.

I started in the weed science world as a PhD student at The Ohio State University studying smother crops for non-chemical management

of Canada thistle. After graduating in 2011, I did a short post-doctoral position at The Ohio State University in tomato breeding. I joined WinField (now WinField-United) in 2012 and currently manage our data to insights program for our research efforts encompassing pesticides, adjuvants, seed treatments, plant nutrients, and yield enhancing products. I have been a member of both ASA and WSSA since 2009 and have served both societies in various capacities.

Over the next few years, we have huge challenges to surmount with herbicide resistant weeds and stewarding new herbicide resistant crops. My goal as the ASA-WSSA Liaison is to facilitate cooperation between the societies on these issues. Additionally, I am seeking feedback from you as NCWSS members on the issues that are of importance to you. Let's work together to advance agriculture through the cooperation of our societies.

Sincerely, Stephanie Wedryk, slwedryk@landolakes.com, 651-375-4087

2016 Officers

Anita Dille, President
Greg Dahl, President Elect
Christie Sprague, Vice President
David Simpson, Secretary-Treasurer
Editor—Proceedings, Greg Kruger
Editor—Newsletter, Vince Davis
WSSA Representative, Reid Smeda
CAST Representative, Lowell Sandell
Past President, John Hinz
Executive Secretary, Phil Banks

2016 Program

Mike Moechnig, Master of Ceremonies
Mayank Malik, Graduate Student Paper Awards
Neha Rana, Graduate Student Poster Awards
Mark Bernards, Undergraduate Poster Awards
Bryan Young, Undergraduate Scholarship Award
John Hinz, Distinguished Achievement Awards
John Hinz, Outstanding Graduate Student Award
Duane Rathmann, Fellows
Anita Dille, Presentation of New Officers

Incoming Officers



Front row Left to Right

Aaron Hager (Vice President)
Anita Dille (Past President)
Greg Dahl, (President)
Christie Sprague, (President-Elect)

Back row Left to Right

Vince Davis (Newsletter Editor)
David Simpson (Secretary-Treasurer)
Greg Kruger (Proceedings Editor)
Lowell Sandell (CAST Representative)

3rd Annual “Women in Weed Science” Networking Breakfast Anita Dille

We hosted our third “Women in Weed Science” networking breakfast on Wednesday morning, December 14, 2016. There were 43 female meeting attendees and guests that participated in round-table discussions over breakfast. We got to know each other a bit better by sharing our responses to various questions such as ‘What is one thing on your “bucket list”?’’, ‘What is your favorite show on Netflix right now?’’, and ‘What is your favorite way to unwind after a long day?’’. Thank you to Cara McCauley, PhD student from Purdue Univ., for preparing this activity. Our special guest speaker was Marji Guyler-Alaniz, Founder and President of FarmHer (www.farmher.com), located in Iowa. She shared her story ... After working in corporate agriculture for eleven years, she started FarmHer in 2013 to begin to shine a light on women in agriculture through photography. One of our NCWSS members, Cheryl Dunne, Syngenta, will be interviewed and photographed and be part of an RFDtv episode in April 2017! Not unexpectedly, we filled our time quickly but were able to get to know each other better. Thank you to the NCWSS Board for supporting this activity. We are looking forward to another excellent event in St. Louis, MO in December 2017.



Washington Report

Lee Van Wychen



What Are Your Most Common and Troublesome Weeds in Grass Crops?

The National and Regional Weed Science Societies are seeking your expertise in identifying the most common and troublesome weeds in the following grass cropping systems: 1) corn 2) rice, 3) sorghum, 4) spring grains, 5) winter grains, 6) pastures/rangeland, and 7) turf.

Please take a few minutes to complete the survey at: <https://www.surveymonkey.com/r/2017weeds>

New CAST Issue Paper- Crop Protection Contributions toward Agricultural Productivity

The Council for Agricultural Science and Technology (CAST) released a new Issue Paper on April 5 that examines the current plant protection revolution that is driven by the biological realities of pesticide resistance, various market forces, and real or perceived side effects of pesticides. The paper has six authors, including weed scientists Dr. Hugh Beckie from Agriculture and Agri-Food Canada and Dr. Jill Schroeder from the U.S. Department of Agriculture. The authors cover a lot of ground in the 20 page report including:

- Plant Protection Trends—Current and Future
- New Biological Insect, Disease, and Weed Management Tools
- The Role of Emerging Crop Protection Technology Solutions in Integrated Pest Management
- How to Preserve Crop Protection Chemistries and Traits—Efficacy, Durability, and Usefulness into the Future

The Issue Paper accurately captures both the similarities and differences in the pest management challenges faced by weed scientists, plant pathologists, entomologists, and nematologists. The authors discuss new technologies such as drones, smart sprayers, and specially designed cultivators--and they examine current biotech advancements such as CRISPR-Cas9 and other techniques that may fit well into integrated pest management systems. They

emphasize the need for research, communication, and collaboration as scientists "develop integrated strategies for managing pests while preserving ecosystem services and farm productivity."

This CAST Issue Paper (IP58) and its companion Ag quickCAST are available online at the CAST website: <https://www.cast-science.org/publications/>

Pruitt Confirmed as EPA Administrator

On February 17, 2017, the Senate confirmed Scott Pruitt as the 14th Administrator of the U.S. EPA by a vote of 52-46. The 49 year old Pruitt was born and raised in Kentucky where he graduated from Georgetown College in 1990. After that, he moved to Oklahoma where he earned his law degree at the University of Tulsa specializing in constitutional law. Most recently, Pruitt served as the Attorney General for Oklahoma. More on Administrator Pruitt at: <https://www.epa.gov/aboutepa/epas-administrator>

Zinke Confirmed as Secretary of Interior

Ryan Zinke was confirmed as the 52nd Secretary of the Interior by the Senate on March 1, 2017 by a vote of 68-31. The native Montanan served 23 years as a U.S. Navy Seal officer, retiring in 2008. He has a B.S. in Geology from the University of Oregon, a Masters in Business Finance from National University, and a Masters in Global Leadership from the University of San Diego.

During his confirmation hearings, Zinke said he would take a "multi-use approach" to federal land management on the more than 500 million acres of public land managed by the Department of Interior. He also vowed to clear the estimated \$12 billion backlog in maintenance and repair at national parks. More on Secretary Zinke at: <https://www.doi.gov/pressreleases/ryan-zinke-sworn-52nd-secretary-interior>

Perdue Approved by Senate Agriculture Committee

The Senate Agriculture Committee approved Sonny Perdue's nomination as Secretary of Agriculture by a voice vote on March 30, 2017.

Washington Report - Continued

He is expected to easily pass a final confirmation vote in the Senate, but unfortunately that vote will not occur until after a two week Easter recess when the Senate returns the week of April 24. Perdue, 70, was born and raised on a diversified row crop and dairy operation in central Georgia and earned a doctorate in veterinary medicine from the University of Georgia in 1971. Following a brief tenure as a practicing veterinarian, Perdue started two businesses from the ground up, concentrating in agribusiness and transportation. There have been 30 Secretaries of Agriculture since the job was created in 1889, and though some were raised on a farm, only two actually lived and worked in agriculture as adults. If confirmed, Sonny Perdue will be number three.

Map of USDA-NIFA Grant Awards by Congressional District Available

A new, interactive map from USDA's National Institute of Food and Agriculture (NIFA) shows both Competitive and Capacity Grant awards to the 1862, 1890, and 1994 land grant institutions. The Congressional District map is based on the 114th Congress (2015-16) and shows awards for each year from FY 2011 through FY 2015. Top of the list in FY 2015 was FL-3, home to the University of Florida, which received just over \$57 million.

See: <https://portal.nifa.usda.gov/web/maps/nifa-funding-by-congressional-district/>

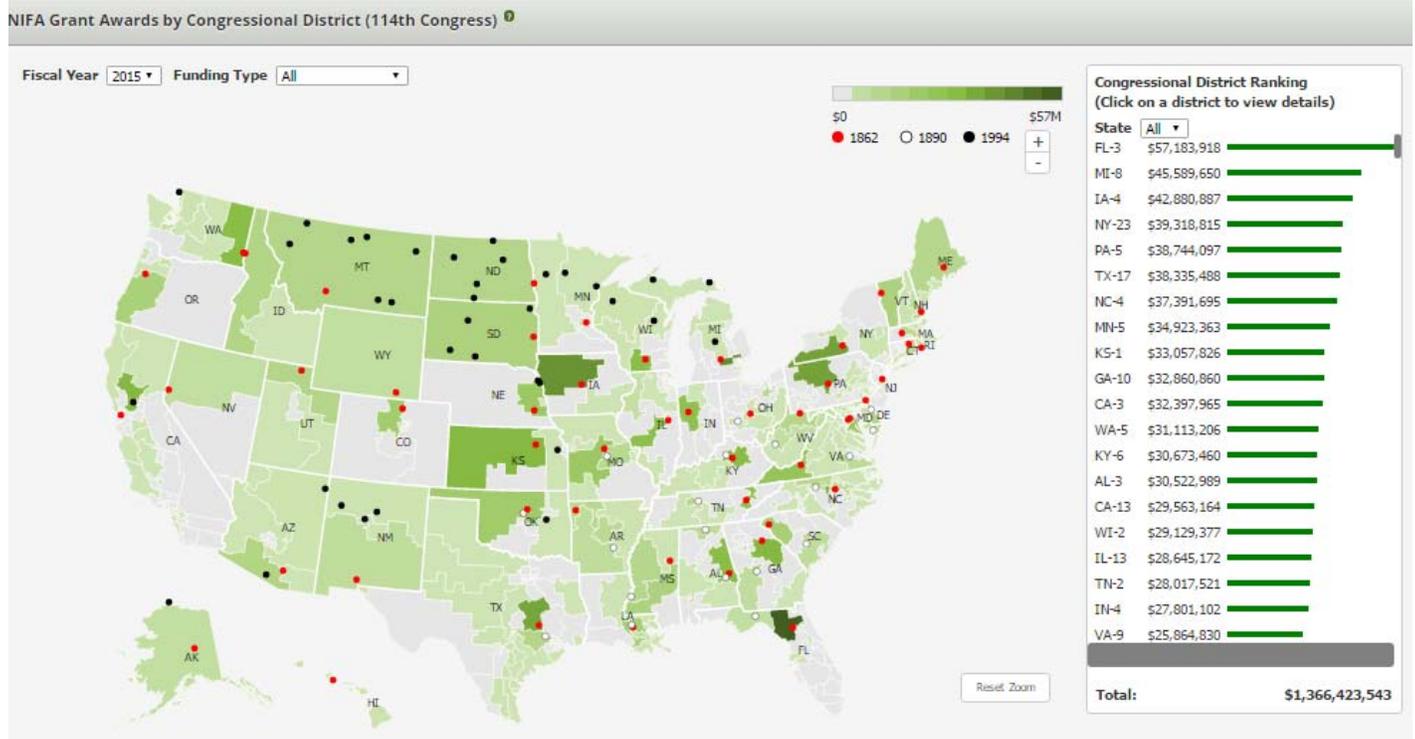
NIFA Releases Study on the Value of Capacity Programs

On March 27, the USDA National Institute of Food and Agriculture (NIFA) released a new report that measured the effectiveness of NIFA's investments in capacity programs. The report entitled, "[National Evaluation of Capacity Programs](#)," was prepared by TEconomy Partners. The report found that capacity funding remains a relevant program that offers multiple benefits. Investments respond to the specific needs of local, regional, and state agricultural producers. Capacity funds offer an essential funding stream for research and extension programs of relevance to producers that are unlikely to receive national-scale attention. **Each dollar of capacity funding leverages \$1.85 in additional investments from state, local, and private sector sources.**

NIFA commissioned the study to determine whether funding based on 100-year-old legislation is still a suitable model to support 21st century university needs. The results of the study will be helpful in defending the federal investment in capacity programs such as Hatch and Smith Lever as budget constraints lead to discussions about potential cuts to the USDA budget.

House Ag Subcommittee Holds Hearing on Ag Research

On March 16, the House Agriculture



Washington Report - Continued

Subcommittee on Biotechnology, Horticulture, and Research held a hearing titled “The Next Farm Bill: Agricultural Research.” For more details: <http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3728>. The subcommittee heard testimony from:

- Dr. Jay Akridge – Glenn W. Sample Dean of Agriculture, Purdue University, West Lafayette, IN; on behalf of APLU.
- Mr. Richard Wilkins – Chairman, American Soybean Association, Greenwood, DE; on behalf of NC-FAR.
- Dr. James Carrington – President, Danforth Center, St. Louis, MO; on behalf of the Danforth Center.

Each of the witnesses talked about the importance of research to the future success of agriculture and the farm economy. Dr. Akridge, testifying on behalf of the land grant universities, spoke about the need to support competitive and capacity programs, as well as infrastructure. Mr. Wilkins, representing the National Coalition for Food and Agricultural Research (of which WSSA is a member), gave the perspective of stakeholders who use and benefit from agriculture research to support their businesses. Dr. Carrington focused his testimony on the Agriculture and Food Research Initiative (AFRI), its operations, and the need for increased support.

This was the first agriculture research-focused hearing conducted in preparation for the next Farm Bill. The House and Senate Agriculture Committees are expected to hold numerous additional hearings as they work to develop the next Farm Bill.

Trump Budget Blueprint Proposes Cuts to USDA

On March 16, President Trump released his budget blueprint for FY 2018. The blueprint provides proposed funding levels across the government, but in most cases does not get into many programmatic details. The Department of Defense would receive an increase of \$54 billion, while most other departments would face significant cuts.

Under the blueprint, the USDA would be cut by 21% from the current FY 2017 Continuing Resolution level. The blueprint does not provide many details on how these cuts would impact

agricultural research. The Agriculture and Food Research Initiative (AFRI) would receive \$350 million under the blueprint, which represents the same level received in FY 2016 and the current FY 2017 Continuing Resolution. However, this is \$25 million less than the House and Senate Appropriations Committee versions of the FY 2017 agriculture appropriations bill. Funding levels for capacity programs such as Hatch and Smith Lever are not mentioned.

The blueprint states that in-house research funding within the Agricultural Research Service (ARS) would be focused on the highest priority agriculture and food issues such as increasing farming productivity, sustaining natural resources, including those within rural communities, and



addressing food safety and nutrition priorities. Without providing specifics, it appears that the Economic Research Service (ERS) and the National Agricultural Statistics Service (NASS) would be cut significantly, although the 2017 Census of Agriculture would be supported.

It is important to note that this is one of the first steps in the development of the FY 2018 budget. Major cuts like those proposed in the Budget Blueprint would have to be approved by Congress through the annual appropriations process. A copy of the Budget Blueprint [can be found here](#).

New National Research Initiative Aims to Improve Cover Crops

The Foundation for Food and Agriculture Research (FFAR) and The Samuel Roberts Noble Foundation launched a national cover crop initiative on March 22, 2017.

The \$6.6 million research initiative, made possible by a \$2.2 million grant from FFAR, will promote soil health through the development and adoption of new cover crops across the U.S. The Noble Foundation has been a leader in developing forages and new cover crop varieties since the 1950s. The initiative will bring together

collaborators from the seed industry, USDA-ARS, USDA-NRCS, three land grant universities, and an existing Legume Cover Crop Breeding Team, comprising another six land grant universities, ARS sites and a producer network.

The focus of the initiative will be to identify cover crop species with the greatest potential to improve soil health and evaluate such species over a broad geography within three groups: small grains (wheat, rye, oat and triticale), annual legumes (hairy vetch, winter peas and clovers), and brassicas (turnips, radishes, kale and mustards).

The project is not limited to traditional breeding and evaluation. Engaging both producers and industry, researchers will seek to identify and introduce key traits that can improve crop performance and soil enhancement. Additionally, scientists at the Noble Foundation will utilize advanced breeding techniques – which have traditionally been limited in application to high-value, row crops – to bring new and value-added characteristics to cover crops.

Field trials will be conducted at five strategic sites to assist with cover crop evaluations: Maryland for the northeast, North Carolina for the southeast, Oklahoma for the Southern Plains, Nebraska for the Northern Plains and Missouri for the Midwest.

Short-term goals of the research are to identify the best cover crop species and varieties currently available through evaluation and screening, promote them to farmers and ranchers, and increase effective options within the marketplace. Researchers will share results from this project with the public through national meetings and peer-reviewed publications. Certain outcomes, including molecular markers, will be made available through publication and publicly accessible databases.

New Paraquat Risk Mitigation Measures Final, EPA Grants Research Exemption. As part of the registration review process for paraquat, EPA proposed additional mitigation measures, such as paraquat-specific applicator training material and prohibiting backpack applications, in order to minimize human health incidents from paraquat. WSSA had several concerns related to the costs and requirements of some of the proposed mitigation measures, but our greatest concern was

that prohibiting paraquat applications from hand-held equipment would essentially eliminate the weed science community's ability to do small plot research with paraquat. WSSA's comments are at: http://wssa.net/wp-content/uploads/WSSA-comments-on-paraquat-mitigation_FINAL.pdf

On Dec. 15, 2016, EPA finalized its mitigation decisions and implementation plan which can be found at: <https://www.regulations.gov/document?D=EPA-HQ-OPP-2011-0855-0112>. EPA addressed many of our concerns with their final decision, including providing a research exemption to a couple of the mitigation measure requirements. Specifically: *“The Agency recognizes that paraquat is widely used in agricultural research as a standard burndown and desiccant treatment, to which other herbicides and desiccants are compared. Because of its use as a standard treatment, it has high benefits for use in small scale research trials. Based on these facts and the comments received regarding the importance of paraquat for research purposes, EPA will grant a research exemption from the closed system requirement and the ‘certified applicator only’ requirement.”*

Pesticide Registration Improvement Bill Passed by House

Legislation to reauthorize EPA's pesticide approval system passed the House by a voice vote under suspension of the rules on March 20 and now heads to the Senate. The legislation, H.R. 1029, is the fourth reauthorization of the Pesticide Registration Improvement Act (PRIA 4) that sets fees for pesticide registrants seeking to get products registered in return for regular approval schedules. Specifically, the bill extends the maintenance fee provision until 2023 and increases the total amount of maintenance fees to \$31 million, extends the prohibition on levying registration fees, and includes additional uses for any fees collected to defray costs associated with registration review. In addition, H.R. 1029 codifies timeframes for experimental use permits as well as clarifies applications of inert ingredients, Gold Seal letters, and any other actions that are not pesticide activities but are subject to registration service fees. Further, annual reporting requirements and set-asides for worker protection, partnership grants, and safety education are extended until 2023.

Since 1954, Congress has authorized the collection of different types of fees to partially defray various costs related to federal pesticide regulation activities. Collected fees are deposited as receipts in the “Reregistration and Expedited Processing Fund” in the U.S. Treasury. These fees are made available to the EPA as mandatory appropriations.

PRIA 1, which became law in 2003, provided the current framework for EPA to collect maintenance and registration services fees. PRIA 2 in 2008 reauthorized and amended the pesticide fee framework by adding new categories of applicants. PRIA 3 further amended the fee framework that is currently applied today. In addition to extending provisions, this legislation adjusts fee amounts, increases transparency, encourages Good Laboratory Practices, and adds flexibility to the use of collected fees.

The law has bipartisan support because registrants also put money aside for farmworker safety and environmental programs. Under PRIA 4, pesticide registrants are proposing to increase those fees and have the measure last seven years instead of five. The law expires on Sept. 30, 2017.

APHIS Seeks Comments on Revision of its Biotechnology Regulations. APHIS is proposing to revise its regulations regarding the importation, interstate movement, and environmental release of certain genetically engineered organisms in order to update the regulations in response to advances in genetic engineering and our accumulated experience in implementing the current regulations, as well as reduce the burden on regulated entities. This is the first comprehensive revision of the regulations since they were established in 1987. To view the proposed rule and submit public **comments by June 19, 2017**, see [Docket No. APHIS-2015-0057](#).

In concert with the proposed revised regulations now being developed, APHIS is developing a process that includes an evidenced-based, standardized approach to assessing risk prior to making the decision whether to require controls (e.g. movement permits). This upfront risk analysis process will include either (in most cases): A [Weed Risk Assessment \(WRA\)](#) to characterize weed risk, if any, of genetically

engineered (GE) plants, OR: A Plant Pest Risk Assessment (PPRA) for invertebrates, microorganisms, and GE plants (where appropriate), to characterize plant pest risk, if any.

Seed Industry Announces New Palmer Amaranth Seed Test

The following press release was issued by the American Seed Trade Association (ASTA), which represents over 700 companies involved in seed production, plant breeding and related industries in North America.

Weed seed can be spread in a variety of ways—including by air, animals, rain, soil and mechanical means. In a recent survey, the Weed Science Society of America (WSSA) identified Palmer amaranth (PA) as a very problematic weed in many parts of the country. To prevent PA from entering the professional seed supply, the native seed industry has been working closely with the scientific community on the development and validation of a rapid DNA test to identify PA.

“This new test will provide companies and their customers with an additional tool to ensure purity,” said ASTA President & CEO Andy LaVigne. “The American Seed Trade Association’s membership includes native seed producers with generations of experience who deliver professionally produced, quality seed to their customers. There’s a lot involved in producing the best seed for the best results.”

Developed by the California Department of Food and Agriculture and Eurofins BioDiagnostics, with support from the Minnesota Department of Agriculture Plant Protection Division Seed Program, the independently validated DNA sequencing method differentiates PA from other amaranth and weed species. While still available on a limited basis, the Minnesota Department of Agriculture Seed Unit recently announced it will accept the test for labeling purposes, as PA has been declared a prohibited noxious weed in the state. Although not designated as a noxious weed in any states other than Ohio and Minnesota, ASTA is taking steps to keep this troublesome weed out of seed sources. In addition to the DNA test, seed producers may also use a growout

Continued Next Page

method from Illinois Crop Improvement Association to evaluate whether weed seeds are PA.

Professional seed suppliers have always taken great care in managing seed production to reduce the presence of diseases, pests and weeds. This includes field preparation and field inspections throughout the growing process; properly cleaning seed using state of the art equipment to maintain quality and performance; and testing to ensure high-quality performance standards are met. They must also comply with federal and state requirements for seed purity and germination, and these results must be on the seed tag. Industry Best Management Practices for Native Seed production can be found [here](#). Click [here](#) for more information on environmental and conservation seed, including a [list](#) of professional seed suppliers in each region.

Farmers who have identified PA in fields or conservation plantings are urged to contact their seed supplier, and local Natural Resource Conservation Service, Farm Service Agency or Extension professional.

Monarchs and Milkweed: The total area occupied by monarch colonies at overwintering sites in Mexico in 2016-17 was estimated to be 2.91 hectares, which is less than the 4.01 hectares in 2015-16, but still greater than the previous four winters before that. By most accounts, the 2016-17 overwintering numbers are still better than anticipated given that the overwintering grounds were hit with a freak snowstorm in March 2016. Weed scientists need to map and track milkweed distributions as there is very little “real data” available about milkweed distributions in the Midwest outside of Bob Hartzler’s survey data in parts of Iowa. I say “real data” tongue-in-cheek because there are several questionable entomology papers in the literature where they basically make up milkweed distribution data, and then conclude that monarch butterflies are declining due to a lack of milkweed.

That aside, the monarch butterfly is now a national priority species of Working Lands for Wildlife (WLFW), a [partnership between USDA NRCS and the U.S. Fish and Wildlife Service \(FWS\)](#) that will focus on the eastern monarch population.

NRCS will provide technical and financial assistance to help producers adopt conservation practices that benefit the monarch. FWS will provide producers with regulatory predictability should the monarch become listed under the Endangered Species Act (ESA). Predictability provides landowners with peace of mind – no matter the legal status of a species under ESA – that they can keep their working lands working with NRCS conservation systems in place. Initial focus is on establishing common milkweed in less productive cropland and NRCS easement land in 7 states in the Midwest and on establishing spider milkweed, zizotes milkweed, and green antelopehorn on grazing lands in 3 states in the South Central U.S. (See map).

WOTUS rule - Judicial, Legislative, and Executive Branch Actions.

On November 1, 2016, opening briefs to the 6th Circuit Court were filed by 31 states, plus various organizations and companies opposed to the expanded federal jurisdiction over streams and wetlands under the Waters of the United States (WOTUS) rule finalized in 2015. The challengers argue that the WOTUS rule undermines state authority and take particular issue with what they say is the federal government’s disregard for whether a body of water is considered “navigable,” which they say should be key in determining where it can regulate. A 6th Circuit Court hearing is unlikely to occur before April 2017.

On Jan. 12, 2017, Senators Joni Ernst (R-IA) and Deb Fisher (R-NE) resurrected a resolution calling for the WOTUS rule to be scrapped. The nonbinding resolution would put the Senate on record as calling for the water rule to be withdrawn or vacated. The Senate fell just short of the 60 votes necessary to kill it last year, but with multiple moderate Democrats facing tough reelections in 2018, that could change. The new resolution could offer a test vote to see where lawmakers stand on the water rule now.

On Jan. 13, 2017, the Supreme Court agreed to hear a challenge by the National Association of Manufacturers (NAM) to a lower court ruling

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because of a provision in the Clean Water Act (CWA) that lays out when challenges are allowed to leapfrog lower courts. NAM's petition argues that challenges to the water rule should be first heard by district courts, rather than by appellate courts, as the 6th Circuit Court decided, because they are closer to concerns on the ground.

On Feb. 28, 2017, President Trump ordered a revised WOTUS rule. His executive order directs the heads of the Army Corps of Engineers and EPA to “review and reconsider” the existing WOTUS rule, which likely means it will be resubmitted through the federal rule making process. The order instructs the two agency leaders to review a 2006 opinion written by late Supreme Court Justice Antonin Scalia in *Rapanos v. United States*. In that opinion, Scalia argued that federal jurisdiction extends only to water bodies with a permanent flow or non-navigable waterways that connect via surface water with areas with permanent flow — definitions with a more limited approach than the EPA established in its existing WOTUS rule that was finalized in 2015.

“NPDES Fix” Legislation Introduced in 115th Congress.

New “NPDES fix” legislation has been re-introduced in both the House and Senate in the 115th Congress. The Reducing Regulatory Burdens Act of 2017 (HR 953) was introduced on Feb. 7, 2017 by Rep. Bob Gibbs (R-OH) and currently has 31 cosponsors. The House Agriculture Committee has already passed HR 953 by a voice vote on Feb. 16th. The companion bill in the Senate is S. 340 and was also introduced on Feb. 7 by Sen. Mike Crapo (R-ID) and Sen. Claire McCaskill (D-MO). S. 340 is titled the “Sensible Environmental Protection Act of 2017” and has 15 cosponsors. The NPDES-fix legislation has been passed by the House of Representatives in each of the last three sessions of Congress in 2011, 2013, and 2016.

Senate EPW Passes Invasive Species Legislation.

The Senate Environment & Public Works (EPW) committee passed the Wildlife Innovation and Longevity Driver (WILD) Act by a voice vote on April 5, 2017. The WILD Act was introduced by Senate EPW Chairman John Barrasso (R-WY) and cosponsored by Ranking Member Tom Carper (D-

DE), James Inhofe (R-OK), Cory Booker (D-NJ), John Boozman (R-AR), and Sheldon Whitehouse (D-RI). The WILD Act (S. 826) would reauthorize funding for the Partners for Fish and Wildlife Program in which the Interior seeks partnerships with private landowners in fighting invasive species, including conserving habitat for the greater sage grouse. The bill would also offer rewards for innovative technologies to stop invasive species

National Invasive Species Awareness Week (NISAW).

NISAW was held February 27 to March 3, 2017 in Washington DC. There were different invasive species themed seminars and webinars every day of the week. All of the NISAW webinars were recorded and are available online at:

www.nisaw.org.

The Congressional Invasive Species Caucus has a new co-chair: Rep. Elise Stefanik (R-NY) who was first elected to Congress in 2015 and is the youngest member in the House of Representatives at 32. She represents the northern 1/3 of New York. Mike Thompson (D-CA), first elected to Congress in 1998 from California’s wine country just north of San Francisco, will remain as the other co-chair of the Congressional Invasive Species Caucus.

Invasive Species Issues Farm Bill Task Force Team.

A group of invasive species management stakeholders, led by the Reduce Risks from Invasive Species Coalition (RRISC) is drafting invasive species management language for the 2018 Farm Bill. Stakeholders include: American Forest & Paper Association, American Hort, Center for Invasive Species Prevention, Davey Tree Expert Company, Kansas State, Lone Tree Cattle Company, Lost Coast Forest Products, National Association of Conservation Districts, National Association of State Departments of Agriculture, National Cattlemen’s Beef Association, National Wooden Pallet & Container Association, Noble Foundation, Northeast-Midwest Institute, Pacific States Marine Fisheries Commission, Society for Range Management, Society of American Foresters, State of Colorado,

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Washington Report - Continued

Syngenta, TNC, University of Georgia, US Chamber of Commerce, Vermont Woodlands Association, and WSSA.

A few examples of some of the invasive species management language the coalition is working on include:

- Adding weed treatment area designations under Healthy Forest Restoration Act
- Promoting Areawide IPM language and funding through USDA NIFA
- Prevent NRCS program participants from planting “invasive plant species” on “reserve” lands
- Pilot projects for landscape-scale testing of grazing as a tool for rangeland invasive species control
- Adding “invasive species” to the Foundation of Food and Agricultural Research’s list of national priorities

NCWSS Region- Most Common and Troublesome Weeds in Broadleaf Crops, Fruits and Vegetables.

In 2016, the National and Regional Weed Science Societies surveyed its members for the most common and troublesome weeds in the following broadleaf crop categories: 1) alfalfa, 2) canola, 3) cotton, 4) fruits & nuts, 5) peanuts, 6) pulse crops, 7) soybean, 8) sugar beets, 9) vegetables-cole crops, 10) vegetables-cucurbits, 11) vegetables-fruited, and 12) vegetables-other. 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).

As you would expect, there were no grass weed species listed as “troublesome” in the top 5 weeds in broadleaf crops. Waterhemp, common lambsquarters, and horseweed appeared on both the “most troublesome” and “most common” lists. As a native Midwesterner, it’s shocking to see Palmer amaranth march north to rank as the 5th most troublesome weed in the NCWSS states. There are documented cases of herbicide resistance for every weed species listed in the table above, and in many cases, resistance to multiple herbicide mechanisms of action. The 2016 data set is available at: <http://wssa.net/wssa/weed/surveys/>

The Rise of Predatory Publishing: How To Avoid Being Scammed!

This last news item is a little bit off the beaten path, but still very relevant to weed scientists. I want to specifically highlight an article in *Weed Science* written by WSSA’s Director of Publications, Dr. Sarah Ward from Colorado State University. The issue of predatory publishing is a rapidly growing concern among all disciplines of science and many seasoned scientists have already been duped.

Prospective authors must ultimately decide for themselves whether an unfamiliar on-line open access journal is legitimate and of sufficient quality to be trusted with a manuscript submission. A useful first step is to find out whether the publisher belongs to the Open Access Scholarly Publishers Association (<http://oaspa.org>), and

NCWSS Region – Top 5 Weeds in Broadleaf Crops					
Rank	Most TROUBLESOME	Times Listed	Rank	Most COMMON	Times Listed
1	waterhemp	45	1	foxtail spp.	53
2	common lambsquarters	44	2	common lambsquarters	51
3	horseweed (marestail)	36	3	waterhemp	35
4	giant ragweed	30	4	redroot pigweed	32
5	Palmer amaranth	27	T5	velvetleaf	28
			T5	horseweed (marestail)	28

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whether the journal is listed in the Directory of Open Access Journals (<http://doaj.org>), which has taken stronger recent action to filter out predatory publications.

Here is the abstract from Sarah's article (DOI: <https://doi.org/10.1614/WS-D-16-00080.1>):

The rise of on-line open access (OA) has profound implications for academic publishing, not least the shift from subscribers to authors as the primary transactional partners for peer-reviewed journals. Although OA offers many benefits, it also paves the way for predatory publishers, who exploit the author-as-customer model to obtain revenue from author fees while providing few of the editorial services associated with academic publishing. Predatory journals publish papers with little or no peer review, and often disguise their real geographical location while exaggerating their scope and editorial expertise. Such journals also attempt to attract authors by promising unrealistically rapid editorial decisions while falsely claiming peer review, and fabricating impact factors and inclusion in academic indexes. The explosive increase in predatory OA journals is not only a risk to inexperienced authors, but also threatens to undermine the OA model and the legitimate communication of research.

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Phone: 202-746-4686

[Meetings of the National and Regional Weed Science Societies](#)

Jul. 16 - 19, 2017 Aquatic Plant Management Society (APMS), Daytona Beach,

FL www.apms.org

Dec. 4 - 7, 2017 North Central Weed Science Society (NCWSS), St. Louis,

MO www.ncwss.org

Jan. 2018 Northeastern Weed Science Society (NEWSS), www.newss.org

Jan. 22 - 24, 2018 Southern Weed Science Society (SWSS), Atlanta, GA www.swss.ws

Jan. 29 - Feb. 1, 2018 Weed Science Society of America (WSSA), Arlington,

VA www.wssa.net

Mar. 12-15, 2018 Western Society of Weed Science (WSWS), Garden Grove,

CA www.wsweedsociety.org

Necrology — Aaron Hager

Merrill Arthur Ross, Jr. passed away in his sleep on Friday, February 3, 2017 at his home in West Lafayette, IN. He was born June 2, 1935 in Montrose, Colorado and grew up on the family farm near Olathe, CO. He graduated from Colorado State University (Colorado A&M at the time) with a B.S. degree in Agronomy (1957), and an M.S. (1959) and Ph.D. in Plant Physiology (1965). By the time he graduated he had taught an introductory course in Weed Control and conducted weed research in turf, horticultural crops, and agronomic crops.

In 1965 he was appointed assistant professor in the Department of Botany and Plant Pathology at Purdue University. His research area was in weed control, with a specialty in the control of perennial weeds (particularly johnsongrass and Canada thistle) in corn and soybeans. Originally assigned extension and applied research responsibilities, his duties gradually shifted to teaching and research. The major thrust of his efforts through the years was dedicated to educating students, the general public, extension educators, crop consultants, growers, and ag industry professionals on weed science principles and practices and how they could be effectively applied to solving weed problems in Indiana. He was promoted to Full Professor in 1974.

He taught Introductory Weed Science for 57 semesters (1971-2001) to approximately 3000 students. His

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Necrology (continued)

involvement with field research and as an extension specialist gave him first-hand knowledge of real-life, practical weed control situations and the ability to clearly relate these experiences to both degree-oriented and short course students. He and Dr. Carole Lembi (his wife and colleague) co-authored *Applied Weed Science*, a textbook first published in 1985 and revised twice. He was active in undergraduate club activities, and he is listed in Purdue's Great Book of Teachers. In 1992 he was presented with the Weed Science Society of America Outstanding Teacher Award. In 1993, he was named an honorary member of the North Central Weed Science Society of America.

He retired from Purdue on December 31, 2001. Besides his wife, he leaves 4 surviving children, 6 grandchildren, and 6 great-grandchildren. He is buried in Montrose, Colorado.

Other News and Publications

Please complete and mail to:

TN Weed Science Society
Attn: Tom Mueller
P. O. Box 53141
Knoxville, TN 37950
or
www.tnwss.org



Yes, I want to attend the
2017 TN Weeds Short
Course

Name: _____

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For more information, contact Tom Mueller at (865) 974-8805 or tmueller@utk.edu or visit our website at www.tnwss.org (Registration is now open)

Class size limited to 40 students, so sign up now!!

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

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

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Attendees tour field plots at
2015 Short Course



Tennessee Weed Science
Short Course On
Herbicide Modes of
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www.tnwss.org

July 17-20, 2017

Registration is now open
Knoxville, TN

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

Contact Us Tom Mueller, Coordinator
Phone: 865-974-8805
tmueller@utk.edu

TENNESSEE WEED SCIENCE SOCIETY

P.O. Box 53141
Knoxville, TN 37950
www.tnwss.org

Other News and Publications (continued)

2017 TN short course Speakers



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



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



Patrick J. Tranel, University of Illinois
PhD, Michigan State University.
Professor with expertise in herbicide resistance and weed molecular biology, genetics, and genomics.



Todd A. Gaines, Colorado State University.
PhD, Colorado State University
Assistant Professor. Areas of emphasis include molecular biology and genetics of herbicide resistance, and developing novel traits in crops through mutagenesis.



Peter Sikkema, University of Guelph
PhD, University of Western Ontario.
Peter conducts research on weed management in corn, soybean, cereals and edible beans. Peter has published more than 250 peer-reviewed manuscripts and was the author/co-author of more than 250 presentations at scientific conferences.



Thomas C Mueller, University of Tennessee
PhD, University of Georgia
(pictured with his wife Sara) coordinates the class and teaches several lectures. His area of expertise is environmental fate of herbicides.