

The GRASS ROOTS

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By American Author and Founding Father of The United States Benjamin Franklin, 1706-1790

This quote by Franklin reminds us to invest in our knowledge during this offseason. We are fortunate to have many opportunities through webinars, seminars, books and conferences during this time.

THE GRASS ROOTS

is the bi-monthly publication of the Wisconsin Golf Course Superintendents Association. No part of the *THE GRASS ROOTS* may be used without the expressed written permission of the editor.

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PRESIDENT'S MESSAGE

Happy Trails

By Jon Canavan, Golf & Recreation Turf Manager, Milwaukee County Department of Parks, Recreation & Culture

At the fall Business Meeting/Election, I will have completed my 10th year involvement on the Board of Directors. I still remember sitting next to Jimmy V at the Reinders conference asking me if I would ever be interested in joining the board. At the time I was thinking there is no way that I would have the time to do this. I talked to my wife that night to get her thoughts. She gave me that look that you would be an idiot if you did not. So after getting the blessing I was all in.

What I did not realize, was how much I personally would benefit from my service on the board. I have been fortunate enough to travel to Lawrence, KS four times. Every time that I went to GCSAA headquarters, I was impressed by the staff of GCSAA and how much they truly care for our association.

The thing that I do cherish the most is the relationship that I was able to make locally and state wide. From working with the professors in Madison, to working with a superintendent that was hosting one of our events. I truly feel that I am blessed for my time on the board.

The board is always looking for members to serve. It is an opportunity I would strongly recommend. It is easy to make excuses why you can't volunteer your time, but the rewards

are not something you realize until you've been part of the process.

I would like to thank Rob Johnson from Waupaca Sand who has served the last 2 years as the vendor representative. Having Rob in this position is extremely helpful and insightful! I would also like to thank Kate Lifke from Trappers Turn GC. Kate served the past 2 years as our Class C representative. Kate did a great job in representing our assistant superintendents. She also did a fantastic job in planning and executing the assistant seminars.

I also want to thank our vendor reps. Without their continued support of our membership. We would not be able to do a lot of things that our association offers.

We have some nice upcoming events. The Hospitality room at the Golf Industry Show in San Diego. This will take place on Wednesday February 6th, from 6:30-9:30 at Revel-Revel. Also we will be having our Spring Business meeting in March at South Hills Golf and Country Club.

Once again thank you, it has been a pleasure and an honor to serve the members and participate on this board. I wish you all a wonderful holiday season and happy new year. 🌱



WGCSA MISSION STATEMENT

The Wisconsin Golf Course Superintendents Association is committed to serve each member by promoting the profession and enhancing the growth of the game of golf through education, communication and research.

WGCSA VISION STATEMENT

The Wisconsin Golf Course Superintendents Association is dedicated to increase the value provided to its members and to the profession by:

- Enhancing the professionalism of its members by strengthening our role as a leading golf organization in the state.
- Growing and recognizing the benefits of a diverse membership throughout Wisconsin.
- Educating and promoting our members as leaders in environmental stewardship.
- Offering affordable, high value educational programs at the forefront of technology and service.
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Impact of Nitrogen Rate on Dollar Spot Suppression

By Ron Townsend, M.S. Student, Plant Pathology, University of Wisconsin - Madison
 Paul Koch, Ph.D., Department of Plant Pathology, University of Wisconsin - Madison
 Doug Soldat, Ph.D., Department of Soil Science, University of Wisconsin - Madison

Author's Note: This article is based on the M.S. research of Ron Townsend and has been submitted for publication in a peer-reviewed journal. Additional aspects of this research focused on nitrogen source will be published in a future Grass Roots article.

Fungicides are largely effective at controlling dollar spot, however concerns surrounding their repeated use have been increasing both within and outside of the turfgrass industry. The average U.S. golf course spends 5% of their total budget on fungicides, or an average of \$36,000 annually (Golf Course Industry 2015). The majority of fungicide costs for golf courses in temperate climates goes towards controlling dollar spot, and can be a source of major financial strain on golf courses with limited resources (Golf Course Industry 2015). Clarireedia resistance to numerous fungicide classes has been documented, including demethylation inhibitors (DMI) and benzimidazoles (Detwiler et al., 1983; Golembiewski et al., 1995; Burpee 1997). Therefore, continued reliance on chemical control may increase fungicide-resistant populations in the future.

Concerns surrounding the reliance on chemical control have led to increased interest in developing cultural strategies for dollar spot control. Previous research investigating nitrogen (N) rate and dollar spot found that higher N rates can reduce dollar spot severity in creeping bentgrass (*Agrostis stolonifera* L.). Williams et al. (1996) observed that when 1.5 lb N per 1000 sq ft applied as urea was applied as a granular fertilizer on both golf course fairways and putting greens planted with 'Penncross' creeping bentgrass there was a significant reduction of dollar spot compared to the non-treated and a 0.75 lb N per 1000 sq ft application rate. Golembiewski et al. (1998) observed that monthly applications of 1.0 lb N per 1000 sq ft applied as granular sulfur coated urea (21-4-11) to fairway height 'Crenshaw' creeping bentgrass reduced dollar spot compared to the non-treated and a 0.5 lb N per 1000 sq ft application rate. However, most past research surrounding dollar spot and N has

not compared N application rates to a standard fungicide program, making it difficult to determine whether these higher N rates approach the control provided by repeated fungicide applications (Golembiewski et al., 1998; Williams et al., 1996). Additionally, these studies focused on the impact of large amounts of granular N applied on a monthly basis. A majority of golf courses are fertilized at lower rates using liquid fertilizer applied at shorter intervals ranging from 7 to 14 days, a process referred to as 'spoonfeeding' (Dernoeden 2002; Carrow et al., 2007). Spoonfeeding allows the turfgrass to plant quickly take up N and the frequent low volume applications promote uniform growth which enhance playing conditions for golf course turf (Bowman 2003; Dernoeden 2002; Liu and Hull, 2008).

The majority of fungicide costs for golf courses in temperate climates goes towards controlling dollar spot, and can be a source of major financial strain on golf courses with limited resources (Golf Course Industry 2015)

The objectives of the research were to (1) assess the impact of various N rates on dollar spot development using repeated (14-day) applications of urea and, (2) evaluate dollar spot severity in response to different synthetic N sources that have acidifying, neutralizing, or alkalizing effects on soil. Our hypothesis was that dollar spot severity will decrease in a dose-dependent manner with increasing N application rate and that no consistent N source impact on dollar spot severity will be observed.

Materials and Methods

Two independent trials were replicated at the O.J. Noer Turfgrass Research Facility (OJN) in Madison, WI and North Shore Country Club (NSCC) in Glenview, IL during the 2015, 2016, and 2017 growing seasons to investigate the impact of N fertilizer rate and N fertilizer source on dollar spot severity. All plots were arranged in a randomized complete block design with four

replications. Trials at both locations were conducted on creeping bentgrass putting greens (*Agrostis stolonifera* cv 'Penncross') grown on a sand based rootzone with United States Golf Association (USGA) specifications and mowed five days a week to a height of 0.125 in and irrigated to replace evapotranspiration. Individual treatment plots measured 6 ft by 4 ft and initial applications at both sites for both the N rate and N source trials were made on 17 June 2015, 20 May 2016, and 15 May 2017. Subsequent applications were made every two weeks with the final application being 30 September 2015, 14 September 2016, and 13 September 2017. Fertilizer and pesticide applications were made using a CO₂-pressurized boom sprayer (R&D Sprayers, Opelousas, LA) equipped with XR Teejet AI8004 nozzles pressurized to 40 psi. All treatments were agitated by hand and applied in the equivalent of 1.5 gal water per 1000 sq ft. No nutrients outside of the prescribed treatments were applied to either site during the three-year period. Flutolanil (N-[3-(1-methylethoxy) phenyl]-2-(trifluoromethyl)benzamide) (Prostar; Bayer Environmental Science, Research Triangle Park NC) was applied on 29 July 2016 and 4 August 2017 to suppress *Rhizoctonia solani* outbreaks during the 2016 and 2017 growing seasons at NSCC. The positive control fungicide program was the same for all the trials and was designed based on commonly used fungicides in the region to control dollar spot on golf courses (Table 1). All fungicides were applied at high label rates and reapplied based on label recommendations.

To assess the impact of N rate on dollar spot development, four N application rates (0.1, 0.2, 0.4, and 0.6 lbs N per 1000 sq ft) were applied every two weeks as a liquid urea spray. In addition, there was a non-treated control that received only water and a positive control fungicide program. A total of 10 applications were made over the course of each season for a total of 1.0, 2.0, 4.0, and 6.0 lbs total N applied annually for each N treatment. The same treatments were maintained on the same plots throughout the three-year trial.

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Table 1. Positive control fungicide program used at the OJ Noer Research Facility in Madison, WI and North Shore Country Club in Glenview, IL from 2015 through 2018.

Trade Name	Active Ingredient	2015	2016	2018
Xzemplar	Fluxapyroxad	4-Jun	18-May	10-May
Banner MAXX	Propiconazole	29-Jun	15-Jun	7-Jun
Secure	Fluazinam	15-Jul	28-Jun	21-Jun
Xzemplar	Fluxapyroxad	29-Jul	12-Jul	5-Jul
26GT	Iprodione	4-Sep	9-Aug	16-Aug
Secure	Fluazinam	16-Sep	22-Aug	30-Aug
Banner MAXX	Propiconazole	30-Sep	8-Sep	13-Sep



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Dollar spot severity was assessed by counting dollar spot infection centers every 14 days between May and September. Turfgrass quality was also rated visually every 14 days using the National Turfgrass Evaluation Program (NTEP) 1 to 9 rating scale where 1=dead/necrotic, 6= minimally acceptable, and 9=excellent. Turfgrass quality ratings included combinations of disease, color, density, and uniformity and were always conducted by the same person to avoid interpersonal variation. Normalized difference vegetation index (NDVI) was collected on 14-day intervals to estimate turfgrass color and was measured using a FieldScout TCM 500 NDVI Turf Color Meter (Spectrum Technologies Inc., Plainfield, IL). Three NDVI measure-

ments were taken within each plot and averaged.

Turfgrass leaf N content was measured monthly from May through September each year. Foliar pH was collected five times per month; zero, two, five, seven, and fourteen days after the fertilizer application. Tissue collection for these measurements was conducted using a Toro 1000 Greensmaster walk-behind mower (The Toro Company; Bloomington, MN) and clippings were collected as the mower was engaged over the middle of each plot. Following collection, the clippings were placed into 0.95 L paper bags and stored at -20 °C until analysis. Total N content was analyzed by Waypoint Analytical (Richmond, VA) and conducted with a LECO FP528 (LECO

Corporation; Saint Joseph, MI) using the Dumas method. Foliar pH was quantified using a method described in Cornelissen et al. (2006) that was modified in order to compensate for larger sample volumes. The measurement of foliar pH was conducted by adding deionized water and turfgrass clippings into a 50-ml falcon tube (Globe Scientific, Paramus, NJ). The tubes were then laid on their sides and shaken at 200 rpm for two hours using a Skyline orbital shaker (ELMI, Riga, Latvia). The samples were then centrifuged at 2000 rpm for 15 minutes using a Damon IEC HN-2II Centrifuge (Needham Heights, MA). The substrate pH was then measured and recorded using an Azzota Microprocessor pH/mV Meter (Randolph, NJ)

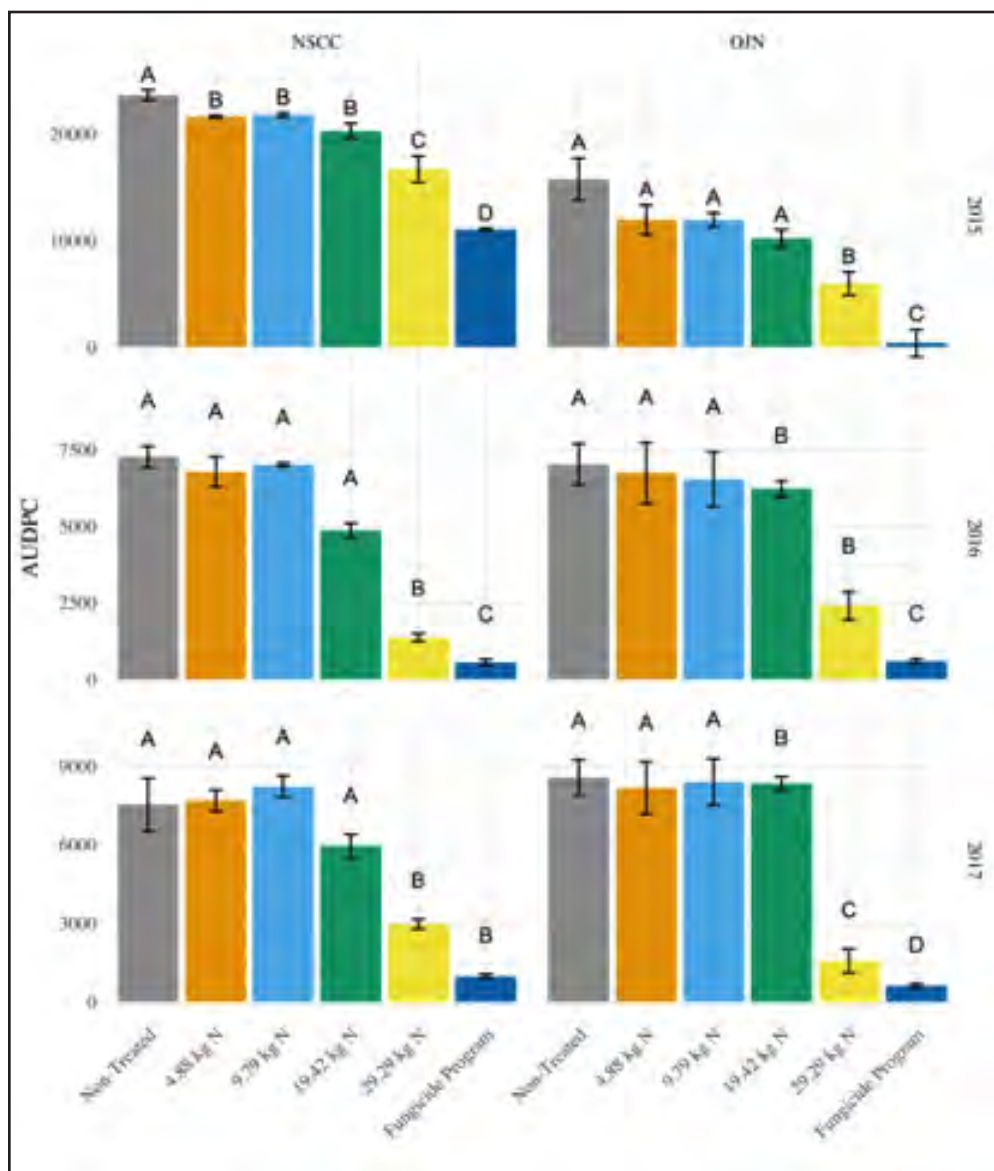


Figure 1. Season-long dollar spot severity as represented by the area under the disease progress curve (AUDPC) at North Shore Country Club (NSCC) and the O.J. Noer Turfgrass Research Facility (OJN) in 2015, 2016 and 2017. Statistics for each site-year were calculated independently and values followed by the same letter are not significantly different according to Fisher's LSD ($P > 0.05$).



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Results

The only N rate that lowered dollar spot AUDPC relative to the non-treated at both sites in all three years was the 6.0 lbs N per 1000 sq ft treatment (**Figure 1, Figure 4**). The 6.0 lbs N per 1000 sq ft treatment provided control similar to the fungicide program in 2017 at NSCC, otherwise the fungicide program provided significantly more effective dollar spot control in all years and locations. The 4.0 lbs N per 1000 sq ft N treatment reduced dollar spot severity relative to the non-treated control at NSCC in 2015, at OJN in 2016, and OJN in 2017. The remaining N treatments (1.0 and 2.0 lbs N per 1000 sq ft) did not impact dollar spot severity when assessed by AUDPC at either site in any year of the study. The disease progress curves for each year and location supported the AUDPC results, indicating that the 6.0 lbs N per 1000 sq ft treatment and the fungicide program provided consistently more dollar spot suppression relative to the other treatments (**Figure 2**).

Turfgrass quality largely reflected the dollar spot severity results and the 6.0 lbs N per 1000 sq ft treatment and the fun-

gicide program typically had the highest quality in all three years of the study. No significant differences ($P=0.05$) were found between the non-treated control and 1.0 lb N per 1000 sq ft treatments during 2015 and 2017, however in 2016 quality was higher in all N application rates compared to the non-treated control.

The number of dollar spot infection centers as impacted by tissue N content from each N treatment in September of 2016 and 2017 is presented in **Figure 3**. Tissue N content typically varied between 1 and 4.5% for all the N treatments from both sites in 2016 and 2017. The exception was the 6.0 lbs N per 1000 sq ft treatment, which consistently had tissue N content between 2 and 6%. The 6.0 lbs N per 1000 sq ft treatment was the only treatment to exhibit a significant ($P=0.049$) negative linear relationship between dollar spot infection centers and tissue N content.

Discussion

The research presented here clearly demonstrates that 6.0 lbs N per 1000 sq ft applied to a golf course putting green on a 14-day interval can significantly reduce

dollar spot severity (**Figure 4**). This fertilizer rate was also consistent with foliar N content between 4.5 and 5%, which may be a critical cutoff point that results in decreased dollar spot severity. Researchers from Ohio State University also observed that foliar N content of 5% and higher led to dramatically reduced levels of dollar spot on golf course fairways back in 2001 (Garling 2000). However, the reduction did not occur in a dose-dependent manner as we hypothesized. Instead, only the highest rate of N (6.0 lbs N per 1000 sq ft) reduced dollar spot severity relative to the non-treated control, though control with this rate of N was so effective that it was similar to control provided by a fungicide program in all but the highest dollar spot pressure. One potential explanation for the lack of a dose-response is that the rates tested in this trial were not in the right range to observe this in a dose-dependent manner. Future research could look at higher rates to see if a dose-dependency could be found, but the rates tested in this research do provide a wide range of N rates for a typical golf course superintendent.

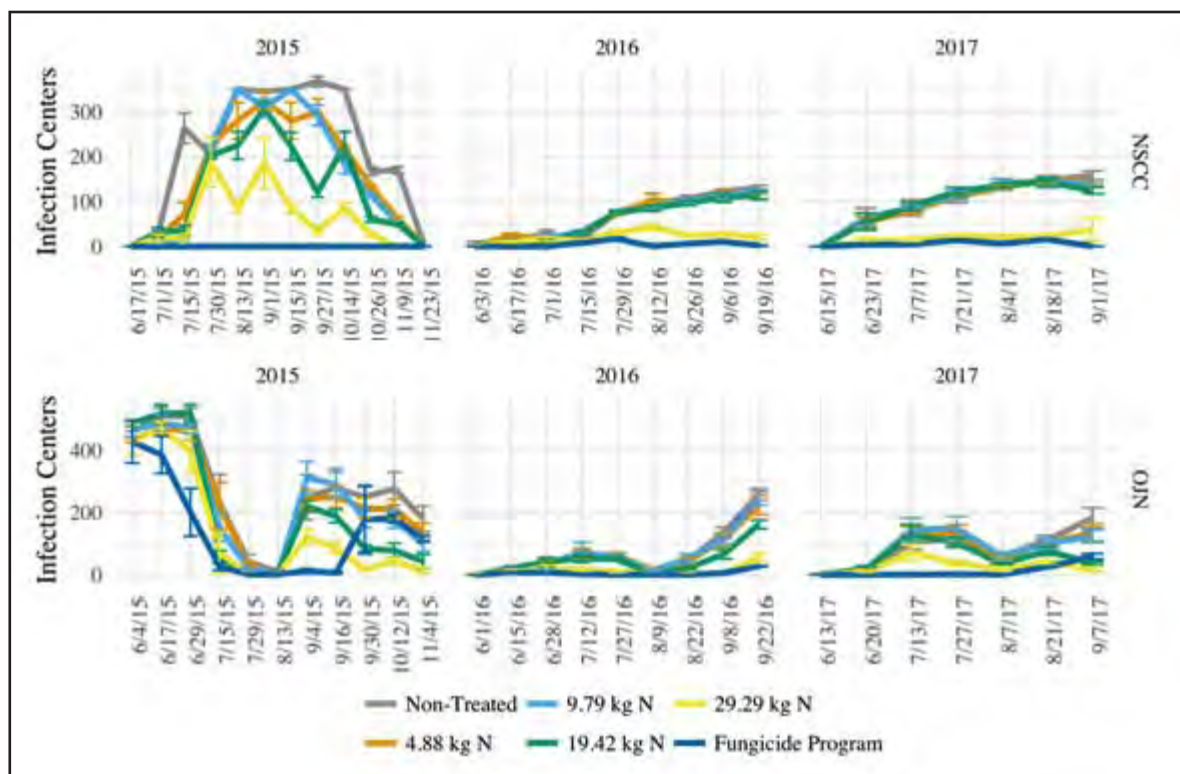


Figure 2. Dollar spot disease progress curve represented as average number of infection centers in 2015, 2016, and 2017 at the North Shore Country Club (NSCC) and O.J. Noer Turfgrass Research Facility (OJN). Error bars represent the standard error.

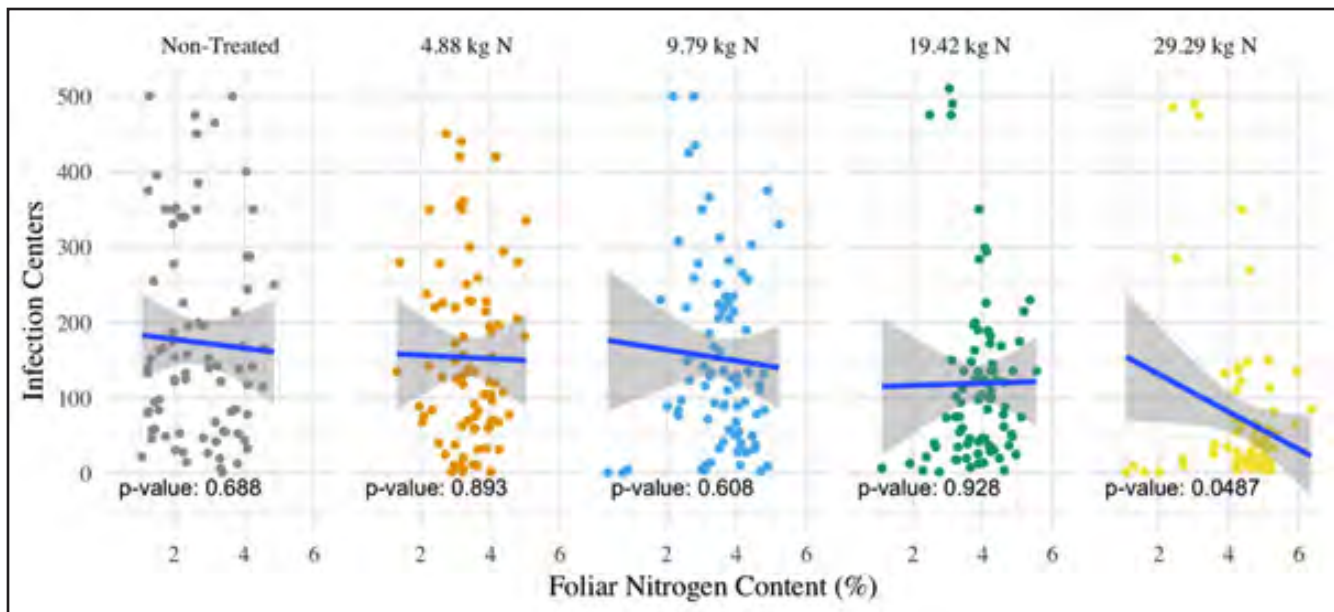


Figure 3. Combined dollar spot infection center and tissue N content from North Shore Country Club (NSCC) and O.J. Noer Turfgrass Research Facility (OJN) in 2015, 2016, and 2017. Statistical significance was determined with an analysis of variance (ANOVA; $p < 0.05$).



Figure 4. The plot on the left received 6.0 lbs of N per 1000 sq ft per year while the plot on the right received 0.0 lbs of N. The picture was taken in September of 2016.

WISCONSIN PATHOLOGY REPORT


Dollar spot reductions and financial savings relative to fungicide programs can be achieved by increasing N rates, but increasing N rates can result in several negative outcomes. While individual applications of 6.0 lbs N per 1000 sq ft are not likely to pose significant environmental risks (Petrovic, 1990), the cumulative effect of the repeated applications are likely to create several challenges. First, 6.0 lbs N per 1000 sq ft of N will increase the rate of soil organic matter and soil organic N accumulation. On a putting green, these accumulations will require more management (i.e. aeration and topdressing) or will run the risk of putting green failure. In addition, increasing N to 6.0 lbs N per 1000 sq ft every 14 days would likely significantly decrease putting green speed, requiring additional labor and inputs to maintain a desirable putting green speed, or face decreased revenue if golfer expectations for

putting green speeds are not maintained. On golf course fairways, the increased N application rate will eventually lead to thatch accumulation and associated problems including decreased firmness, decreased drainage, and increased potential for disease. In both fairway and putting green situations an environmentally significant level of N leaching may eventually result from elevated fertilization as demonstrated by Frank et al. (2006).

In addition, higher N promotes destructive turfgrass diseases such as brown patch (*Rhizoctonia solani*) and Pythium blight (*Pythium aphanidermatum*) (Freeman 1974; Burpee 1995). Although brown patch and Pythium blight are less common than dollar spot, any increase in fungicide usage to suppress these diseases at higher N rates will negate the benefits achieved through less fungicide usage targeting dollar spot. To address these is-

sues, research focusing on lower but more frequent N rates can be explored as well as the use of plant growth regulators to manage clipping yield at higher N rates. In particular, a growing degree day model for use in timing plant growth regulator applications was released by Kreuser and Soldat (2011) and may aid golf course superintendents in managing excess clipping production without sacrificing foliar N content.

Acknowledgements

The authors would like to thank Dan Dinelli, superintendent at North Shore Country Club in Glenview, IL for hosting the trials at his golf course. In addition, we would like to thank the Wisconsin Turfgrass Association, Chicago District Golf Association, and the Midwest Association of Golf Course Superintendents for providing funding for this research. 

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By Mitchell Linnerud, Student, Rutgers Professional Golf Turf Management School

Editors Note: Mitchell Linnerud is a student at Rutgers Professional Golf Turf Management School and will be filling an Assistant In Training (AIT) position at Medinah Country Club in spring of 2019. This student article is eligible for the Monroe S. Miller Literary Scholarship.

"I get to play golf for a living. What more can you ask for, getting paid for doing what you love." -Tiger Woods. I too share this same philosophy, with the only exception being that I get to assist and be a part of maintaining the playing surface. My appreciation for golf courses started at a young age. My grandfather and I would play at a local course at least three days a week during the summer. I spent countless hours on golf courses from grade school to high school; little did I know that this trend would continue and lead me to a new industry and

once in a lifetime opportunities.

During my senior year of high school, I decided that I was going to attend UW-Platteville, but I was not sure what I wanted to major in. The end of my senior year my golf coach handed me a job posting for summer grounds maintenance at Maple Bluff Country Club. I decided that spending a summer working on a golf course would be a great experience, so I applied for the job and got it.

As soon as I realized that this was a profession I could do for the rest of my life, I sought further information in golf turf management from my previous Superintendent, Josh LePine.

The fall of 2016 I began my freshman year at UW-Platteville. I enjoyed the university, but I felt that I could learn more if I studied turfgrass science, which UW-Platteville did not have. I

finished both semesters there and then returned to my work at Maple Bluff. My boss, Josh, recommended that I explore some of the specialized two-year programs that different universities offer. After searching countless hours and reading about different programs, I decided that Rutgers Professional Golf Turf Management School was the ideal program for my situation.

Rutgers offers a two-year program that consist of two, 10 week sessions with a required internship the summer between sessions. Before arriving at Rutgers, I applied for an internship at National Golf Links of America in Southampton, NY. I was fortunate enough to be accepted as an intern.

This was my first internship and that meant being far away from my family and friends, but it was too great of an opportunity to pass on.



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Mitchell spraying fairways on the 9th Hole of the National Golf Links of America in Southampton, New York. The club was founded in 1908 and was designed by Charles Blair Macdonald.

STUDENT ARTICLE



My fellow interns From left to right; Bob, Jack, myself and Archy at the US Open practice round on hole nine at Shinnecock Hills Golf Club.

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STUDENT ARTICLE


On March 20th, 2018, I packed my car and set out on my second venture out East. Once I arrived at National Golf Links of America I was greeted by the Superintendent, Bill Salinetti, and his management staff. They assured me that if I demonstrated devotion and commitment, I would come out of this internship prepared to be an assistant superintendent and eventually a head superintendent.

The six months that I spent in Southampton went by quickly. Being at a top 10 golf course in the country was very beneficial because the expectations were extremely high and you're exposed to the turf industry's most cutting edge philosophies. I was exposed to every aspect of golf course maintenance, from boom sprayer applica-

tions, fertility and water management, irrigation repairs, cultivation practices and much more. Not only was my internship a great learning experience, but I made lifelong relationships with the assistant superintendents, interns and assistant golf pros.

One of the beneficial parts of my internship was being a part of the U.S. Open at our neighboring course, Shinnecock Hills Golf Club. Watching Shinnecock and the USGA setup for the event months before really made the long days go by faster. During the Open I assisted in approach mowing, divots, bunker raking and hand watering tees throughout the entire week. Shinnecock did an excellent job giving me various jobs, which made the week even

more special. Being a part of the agronomy team for an event of that magnitude was great for making connections as well as an unbelievable learning experience.

I am currently in my final year at Rutgers and I am eager to see what the future holds. After graduating I will be moving back to the Midwest, where I recently accepted an AIT position at Medinah Country Club. This job will hopefully help me grow as an individual and a turf manager. My long-term goal is to become a certified golf course superintendent at a course in Wisconsin. This state is full of many prestigious courses that I would love to be a part of. I can't thank my family, friends and mentors enough for giving me guidance on this unbelievable journey. 



Left: National Golf Links Irrigation Tech Leo using a trencher/puller to install a new irrigation line with fellow intern Archy.

Below: Fellow intern Bob Narciso hand watering a fairway at dusk during the club championship at the National Golf Links of America.



STUDENT ARTICLE



Top: Mitchell helping with spring aerification on the first hole at the National Golf Club.

Right: Mitchell mowing the 9th approach at Shinnecock Hills for the US Open.



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2018 WGCSA Legacy Scholars: Luke Davison and Mitchell Van Herwynen

By Josh LePine, Certified Golf Course Superintendent, Maple Bluff Country Club &
Jeff Barlow, Certified Golf Course Superintendent, Waupaca Country Club

Authors Note: The WGCSA Legacy Scholars Program was developed to recognize outstanding students and offer educational aid to children/stepchildren/grandchildren of active class A, B, C, Class A retired or class AA WGCSA members. Starting in 2016, the WGCSA Board of Directors budgeted additional funding for our Legacy Scholars program. We are now offering two scholarships in the amount of \$1,000 each. In order to improve eligibility for high school seniors, we moved the application deadline to May 1st. Congratulations to our two 2018 WGCSA Legacy Scholars.

Name: Luke Davison

WGCSA Member Relation: Son of Marc and Laurie Davison. Mark is the Class A, CGCS at Bishops Bay Country Club in Middleton, WI.

Educational Status: Luke is a 2014 graduate of Notre Dame Academy in Green Bay, WI and is currently pursuing a Bachelor's degree in Accounting at St. Norbert College in De Pere, WI

Work History:

Greens Crew, Green Bay Country Club
Culvert Delivery, Green Bay Highway Products
Valet, Bishops Bay Country Club
Golf Services, Minot Country Club

Achievements and Extra-Curricular Activities: Luke is a Dean's List student athlete and member of the Men's Varsity Hockey team at St. Norbert College earning the honors of Northern Collegiate Hockey Association's All Academic Team, All Freshman Team and NCAA D3 Frozen Four Tournament Team. Luke volunteered for 3 years with the Dream Catchers Baseball Association in Minot, North Dakota. The program offers children with mental or physical impairment the opportunity to get together for America's favorite pastime.

Quotes from Application Essay:

Please describe one attribute of your Parent, Step-Parent or Grandparent that allowed them to be successful in the Golf Course Superintendent Profession and how you plan to use that attribute in pursuing your education.

"A strong work ethic has always been a key value instilled by my family for as long as I can remember.... My parents expected me to model my work ethic after them and to do my very best no matter what job I was doing, whether that be my school work, chores around the house, my summer jobs or hockey. My parents often talked about the importance of being responsible, dedicated and above all else, a morally good person."



Luke Davison, Legacy Scholarship Recipient

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Name: Mitchell Van Herwynen

WGCSA Member Relation: Son of Jim and Kimm Van Herwynen. Jim is the Class A, CGCS at South Hills Golf & CC in Fond du Lac, WI.

Educational Status: Mitchell is a 2016 graduate of Fond du Lac high school. He attended UW Fond du Lac for one year and recently transferred to UW Madison to study Plant and Soil Science- Turfgrass Management.

Work History:
Grounds Crew, South Hills Golf & CC 2014 to present

Achievements and Extra-Curricular Activities: Mitchell is a National Honors Society Member and graduated Cum Laude. UW Fond du Lac Highest Honors Dean's List. High School varsity Cross Country and Track/Field. State Champions- Varsity Rock Climbing team, Math Team, Mr. Fond du Lac, Football and Judo practitioner.

Quotes from Application Essay:

Please describe one attribute of your Parent, Step-Parent or Grandparent that allowed them to be successful in the Golf Course Superintendent Profession and how you plan to use that attribute in pursuing your education.

"There are many attributes that my father possesses which have allowed him to become a successful golf course superintendent: his communication and observational skills, genuine care and understanding for his workers, flexibility and ability to create an enjoyable environment while still accomplishing the goal come to mind. However, the attribute that has stood out the most to me is that despite 34 years in the industry, he has never grown complacent..... Relating to myself, I hope to use this attribute, striving for excellence in multiple ways to become a more successful and multifaceted individual."



Mitchell Van Herwynen, Legacy Scholarship Recipient

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No Pain, No Gain

By Jake Schneider, Trailing Spouse, Norway

I came into this Norway experience somewhat naively. To begin, I had never visited Norway much less Trondheim. However, I had traveled to Sweden a few times thanks to my family keeping in regular contact with the foreign exchange student that we hosted when I was about five years old and having those positive experiences made me comfortable with this part of the world. In fact, I'm writing this article from just outside of Gothenburg, Sweden on the dining room table of the family of said foreign exchange student while he and his youngest two children are assembling masks and playing Legos in an adjacent room. But, it goes without saying that visiting for a week or two as a kid is less significant than living for two-and-a-half years as a mid-30s adult.

During the run-up to finding out about the move, Melissa filled my head with all sorts of pro-Trondheim propaganda, and my own internet queries revealed that it did, in fact, appear to be a first-world city with picturesque surrounds. After two months, I can confirm these findings. If the assignment had been somewhere vastly different than the US, I certainly would have requested a pre-move visit and put more research into what exactly it means to relocate to another country without a job or even great prospects for obtaining one.

My general ambivalence and ignorance about replacing something (work) that previously accounted for nearly half of my waking hours was both good and bad. It was positive in the sense that I may have struggled with the once-in-a-lifetime decision to move to a foreign country in light of not having an unlimited budget and being someone who might be classified as a busybody, and it was negative in that I didn't fully consider how I was going to fully occupy my time and mind in a place where I didn't speak the language and where my friends and family were thousands of miles away. Thankfully, it seems as if everyone in Norway also speaks nearly perfect English, and the modern wonders of WhatsApp and Google

Hangouts makes texting with my buddies and video chatting with my family quite easy. While these technological applications have eased the transition, it still feels as if something is missing, and although I had increasingly not defined myself by my career, jobs do offer a sense of purpose and structure—both of which I enjoy.

In the months prior to receiving the final decision about whether Melissa would be offered this temporary work assignment, we had invested significant time discussing what it would mean for me and my own career. Frankly, I had been mulling a change for a few years as I was increasingly feeling a loss of satisfaction with a job that was heavily-dependent on weather and an unstable workforce. Plus, it was difficult to feel as if I was making the world a better place by facilitating well-manicured corporate grounds or snow-free parking lots. It turns out that I must have some sort of altruistic tendencies that are a real pain in the you-know-what sometimes. Present times have me perusing finn.no with 'English' as the only job search keyword, and I've been unsuccessfully throwing darts at any job that seems as if I maybe, possibly, just might be considered despite not knowing Norwegian or having a IT or engineering background. I'm still waiting to hear back about the 30% position as a banquet server at a local hotel.

Such is the typical life of the trailing spouse. Yes, I recently found out that I have an official title, and our friends at Wikipedia have defined that role as 'a term used to describe a person who follows his or her life partner to another city because of work assignment'. Heck, there is even a 'trailing spouse syndrome' which is associated with a loss of identity and direction, loneliness, a gap between expectations and experiences, and relationship challenges. In a text message exchange with my best friends, they were discussing recent work stresses, and sheepishly, I told them that I was having more consistently challenging days that I had experienced since my

divorce. And, it almost seemed absurd that I could make such a comment considering that I have minimally-important daily obligations, but it was absolutely true. Of course, one of my buddies made the comment that it must be exhausting traveling Europe.

Alas, it's not my goal to generate pity because I know that this is the wrong audience, especially after the monsoons that overtook Wisconsin this summer, but it is about personal growth and the uncomfortable situations that often eventually come as a result. In my own life, moving from Hilbert to Madison, the 2012 drought, the 2013 Green Bay Marathon, getting divorced, and moving to Norway have been the biggest challenges that I've faced (in chronological order). Respectively, they have resulted in finding a city that I called home for 15 years, understanding what it means to work hard, finding extra drive to qualify for the Boston Marathon, discovering what makes me tick, and to be determined. I can't wait to see what comes of the current journey, but if history is any indication, it will be damn good. ✓



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Fall TDL Happenings

By Kurt Hockemeyer, Turfgrass Diagnostic Lab Manager, O.J. Noer Turfgrass Research and Education Facility

It feels like just a few weeks ago was summer, but then again the 1-3 inches of snow they are calling for tonight makes it feel light-years away at the same time. Snow mold research season has gone by extremely quickly. Most of the winter research is done now for the winter, until we come back in the spring to rate disease pressure. I was just in Minocqua and Wausau yesterday, and had to shovel off some snow on the plots so that I could make a final fungicide application (**Figure 1**). But sometimes that happens when your research plots are 3 hours away.

The large snow mold trial that goes out every year in Marquette, Wausau, and

Madison is a little bit smaller this year at 76 treatments. Although it's smaller than in years past, it's still the largest trial we conduct. The applications at Marquette (**Figure 2**) and Wausau have been completed, and the applications in Madison will go out towards the end of November. As always there is an interesting mix of fungicides in the trial. There are some new products. Some of them are new formulations of old active ingredients, and others are new combinations of old active ingredients. There are some granular fungicide treatments. Some new generic products are in there as well. There are some experimental products as well but

even I don't know what those are. Maybe if some of them work well we may see some new active ingredients roll out in the years to come.

I've talked about our snow mold timing trial in the past, but we are conducting it again this winter. The goal is to come up with some kind of timing model, similar to how we use GDDs in the spring to time PGRs or herbicides or fungicides. Rather than, "Sometime before snowfall", we are trying to give a more precise answer to the age old question, "When should I apply my snow mold fungicides?". This trial is replicated in Minocqua, Wausau, and the OJ Noer Research Station near Madison.




Left: Figure 1. Shoveling snow off of research plots is not ideal, but sometimes necessary when conducting snow mold research.

Right: Figure 2. The "small" snow mold trial in Marquette. Only 76 treatments this year, but still quite the beast of a trial.

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The final snow mold trial we are doing we simply call "Pink Snow Mold". This trial is conducted at the OJ Noer. The various fungicide treatments will be inoculated with the pink snow mold pathogen, and then covered for the winter to encourage disease proliferation. The interesting thing about this trial is we are applying 4 different fungicides at 3 different water volumes. We are trying to see if applying at lower water volumes has a negative effect on fungicide efficacy. Hopefully we can get some good disease pressure this year.

Another thing you may be seeing or hearing about is that the TDL is looking for more contract members. Contract members are the main financial support for the lab, and support over the last decade has steadily declined. So you may be seeing some new ads or letters coming to your facility in which we are asking for your support. Without our contract members, the TDL simply would not exist. So please consider supporting the lab so that we can continue to support the industry with our diagnostic services. Feel free to contact the lab if you have any questions. Thanks and enjoy your offseason. 

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GCSAA Member Benefits Expanded

By Shane Conroy, GCSAA Field Staff - Great Lakes Regional Representative

Members continue to be the focus of GCSAA. In fact the first portion of the GCSAA mission statement reads: 'GCSAA is dedicated to serving our members.' With that in mind, GCSAA has teamed with Meridian One, out of Alexandria, VA, which specializes in providing associations, chambers and other member organizations with best in class savings programs for their members.

Meridian One has a family of affinity programs, which provide services and attractive discounts to GCSAA members and their families. By leveraging the buying power of GCSAA members, Meridian One is able to offer programs which allow members to reduce their business expenses.

Through Meridian One, GCSAA members can receive instant savings on products and services from UPS, the UPS Store, Lenovo, Office Depot, Avis, Budget and Member Freight.

GCSAA has also partnered with Hays Companies to bring options in health, vision, dental and other insurance offerings to GCSAA members. Hays is a leading national insurance and financial services organization, which is providing a variety of supplemental product and service of-

ferings exclusively to GCSAA members. Additionally, GCSAA members receive discounts at TireBuyer, UniFirst and select Columbia Sportswear products. To see all of the GCSAA member discount offerings, go to www.gcsaa.org/about-gcsaa/membership/membership-benefits to see the different programs.



Another exciting recent announcement included the debut of the GCSAA Podcast. The podcast will be produced monthly and will feature pertinent association and industry content. Some of the information you can expect to hear will include information on educational offerings, updates on new and upcoming GCSAA programs, human interest stories, including interviews with some of the biggest names in golf course management, and content from golf events across the globe. Scott Hollister, editor-in-chief of GCSAA's Golf Course Management magazine is the host of the podcast.

This first episode debuted in early Oc-

tober, with Scott Hollister opening the episode with an interview with GCSAA CEO Rhett Evans. Additional content on the episode included information on the Environmental Leaders in Golf Awards, and interviews with GCSAA members who were selected to volunteer at the 2019 Ryder Cup at Le Golf National in Paris.

"We are very excited to have another way to communicate with our 18,000 members," Evans said. "However, the GCSAA Podcast also gives us the opportunity to share all the good things happening in the golf course management industry with a wider audience."

Recent episodes included industry leader Matt Shaffer, an update on GCSAA's new First Green program, an interview with superintendent Lawrence Powell of the Powell family who will receive GCSAA's 2019 Old Tom Morris Award, as well as a look into the 2019 Golf Industry Show, taking place February 2nd-7th in San Diego.

In addition to streaming services, past episodes of the podcast will be available on the GCSAA website at www.gcsaa.org/podcast. The podcast is also available on Apple Podcasts, Spotify and Stitcher.

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The First Time Ever

By Bruce Schweiger, Manager, O.J. Noer Turfgrass Research and Education Facility

On October 1st, after a serious conversation with Harrison Beal, assistant superintendent at Kenosha Country Club, I made the tough decision to cancel the WTA Golf Outing. Kenosha Country Club received 2.4 inches of rain overnight. This rain combined with other recent rain events left the course soaked. This was a very difficult decision, but one I was comfortable making. Harrison was confident if they received no more rain, he could find a way to route the outing around the very wet areas. In the true spirit of all turfgrass managers, he was doing all he could to find a way for the event to go on as scheduled.

There were many things I took into consideration while I pondered the right decision to make. The short list: travel issues for the attendees, loss of income for the WTA, all the hard work by the Kenosha Country Club staff. While I contemplated these issues and more, I kept having a re-

curring thought in my mind of me, at an event somewhere, having a spirited conversation that went something like this: "Can you believe that those golfers would play in weather like this? I would not have allowed them to play but the club can use the revenue. My staff has worked so hard this year to get the course perfect. The damage the outing is doing will take time to repair, I hope the members understand. When will golfers ever understand how much damage they cause to the course when they play in these sloppy conditions? They pay me to work in this weather, I would not choose to be out here!"

Yes, we have all been part of this discussion as a golf course superintendent or a sports field manager. These thoughts and the forecast of heavy rains with storms at the end of the day when all the attendees would be traveling home, guided me to cancel the outing. How can a group of turfgrass profes-

sionals hold an event on a course when we all know there was a good chance we would be harming the course. We are better than that!

After I made my decision, I worried about what the decrease in income would mean to the WTA in the short term. The next day, I contacted all the players and industry partners that supported the event. This was a task I hoped I would never have to undertake, but it must be done. To my surprise, but what I hoped for, almost everyone made comments about the event being fun but the goal is to raise money for the WTA and the turf team. I heard comments like, "I have faith the money will be put to good use so please accept my registration as a donation to the WTA." This happened many many times and made me proud that I am associated with such a great industry. On behalf of the WTA Board, The UW Turf Team and myself, we all want to say **THANK YOU** so very much!

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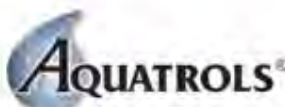
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NOTES FROM THE NOER

I stand by my decision but it is an uneasy feeling knowing that canceling the golf outing could be a financial hardship on the WTA and its mission. The golf outing is a major source of income for the WTA. This single event will raise close to \$10,000 which supports the research conducted by the UW-Madison Turf Team.

On average, this one-day event will contribute 20-25% of the WTA annual income, second only to memberships. The other two events that the WTA hosts, Research Day and the Summer Field Day, are not a large money making events. These two events were designed to disseminate the newest turfgrass research information and allow the WTA members to hear the newest research at a WTA event first before the rest of the industry. When the WTA was established, they felt it very important to create a vehicle to share the research done at the UW-Madison with the industry in a timely manner. These two events allow the turf team to share their latest work on many topics with the industry without writing a brief novel for everyone to read.

At times, we forget that the mission of the WTA is to be dedicated to better turf through research and education.


At times, we forget that the mission of the WTA is to be dedicated to better turf through research and education. The support comes in multiple forms; direct research support, graduate fellowships, upgrades to the O.J. Noer Research Facility, contact with the College of Agricultural and Life Science to promote on our behalf, and scholarships for students.

The WTA created four Graduate Fellowships before I started working at the UW. I took these Fellowships for granted. Over my years at the UW-Madison, I have had many conversations with personnel at other turfgrass universities and when the topic of graduate fellowships comes up a few universities have one or two but I have yet to have anyone tell me they have FOUR Fellowships as we do here at UW-Madison. The professors can use these fellowships when they are recruiting future graduate students. These fellowships demonstrate the level of commitment Wisconsin has to Turfgrass Industry. This is something we can all be proud of!

As one of the "old-timers", I can always rely on "I remember when." As memberships stay stagnant and costs increase, the WTA is always in need of finding more ways to raise funds, dues increases are short-lived and not always the best option. There was a time in the way back machine when Superintendents like Mark Kienert (formerly at Bull's Eye CC) and Jeff Bottensek (formerly at Stevens Point CC) Jerry Kershasky (formerly at Westmoor CC) went to their membership committee and explained the WTA's role in driving the standards of the green industry. Each club would put a checkbox on the year's dues statement allowing the members to add \$5-10.00 to their annual dues, which was donated directly to the WTA in the name of the club. There were others and this simple gesture raised a significant amount of money.

A few vendors also would run annual promotions where

a bounty was put on a product or product line and a percentage would be donated to charity. Reinders' had the longest running program where it donated \$5.00 per case for every case of Dacnil to the WTA. Then the onset of generics and other issues and this and other programs fell by the wayside. I do not have the figure but every year at Research Day there was a line of people that showed their support to the WTA. We could use that support now. As individual members, maybe we could all adopt a New Year's resolution for each member to try to recruit one new member. If your friends are already members, then maybe talk with a landscaper or sports turf manager in your area. There is still a great need for more research and funding allows the professors to accomplish that research. Just think every new dollar the WTA takes in can go 100% to research since annual costs are being covered by your continued support.

I hope your season ended quietly and you take some time to re-charge this winter because before you know it Spring will be here! 





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NOTES FROM THE NOER



January 8th, 2019 Turfgrass Research Day

Conference & Webinar
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- 8:00-8:30am Registration
8:30 – 8:45 Welcome and Scholarships
8:45 – 9:30 **Jessica Cebula– University of Wisconsin – Health Services**
Safety for the Green Industry
9:30 – 9:50 **Qiyu (Ada) Zhou, Ph.D. student, University of Wisconsin - Soil Science**
Effects of Nitrogen Rate, Golf Footwear Traffic and Soil Organic Matter on Creeping Bentgrass Growth
9:50-10:15 **Michael Bekken, Ph.D. student, University of Wisconsin - Soil Science**
Methods for Quantifying Sustainable Resource Use on Golf Courses
10:15 – 10:30 Break
10:30 – 11:15 **Audrey Simard, M.S. student – University of Wisconsin - Entomology**
Effects of Pesticides in Guttation Water on Pollinators
11:15 – 12:00 **Dr. Brian Horgan – University of Minnesota**
Value of Urban Greenspace as a Natural Resource
12:00 – 12:50 **Lunch**
1:00 – 1:30 **Kurt Hockemeyer – Turfgrass Diagnostic Lab**
2018 TDL Update
1:30 – 2:15 **Mike Krupke - Insight FS & Josh Veit - Midwest Athletic Fields**
Resurfacing Made Easy
2:15 – 3:00 **Dr. Paul Koch – University of Wisconsin - Plant Pathology**
Impacts of Cultural Practices and Pesticide Applications on the Turfgrass Microbiome



Qiyu(Ada) Zhou is a Ph.D. student in the Department of Soil Science at the University of Wisconsin-Madison. She received joint B.S. degrees in Prataculture Science and Crop and Soil Science from Sichuan Agricultural University, China and Michigan State University. She earned a M.S. degree from UW-Madison in soil science. She is currently studying turfgrass growth model.



Michael earned a B.S. in Biology and Geology and played collegiate golf at the College of William and Mary in Virginia. Michael is currently pursuing a Ph.D. at the University of Wisconsin-Madison under the direction of Dr. Doug Soldat where he is studying resource use efficiency on golf courses.



Audrey received her B.S degree in May 2017 from the University of Wisconsin – Madison in Genetics. She studied identifying the genetic bases of desiccation and cold tolerance in Drosophila melanogaster. She is currently researching how pesticides affect honeybees.



Brian Horgan is a professor and associate head for the Department of Horticultural Science at the University of Minnesota. He holds degrees from Michigan State University, North Carolina State University and the University of Illinois. His research interests focus on the fate and transport of pesticides and nutrients, water conservation strategies, and low-input turfgrass systems.



Kurt manages the Turfgrass Diagnostic Lab at the O.J. Noer Research and Education Facility. He also oversees the field trials conducted as part of Dr. Paul Koch's research program. He received his B.S. in Turf Science and his M.S. in Turf Pathology both from Purdue University. He has been a member of Dr. Koch's research team since fall of 2015.



Josh has over 10 years of experience with athletic field construction. He also has international field experience with Major League Baseball. He received his B.S. in Horticulture, Turfgrass Management from Iowa State University.



Mike is a Certified Turf Specialist for Insight FS. He has spent much of his 25 year turf career as a golf course superintendent. Now his focus is consulting with sports turf managers throughout southern Wisconsin in improving and maintaining their playing surfaces through sound agronomics and turf science.



Paul Koch is an assistant professor in the Department of Plant Pathology as well as the Molecular and Environmental Toxicology Center at the University of Wisconsin-Madison. He joined the faculty in January of 2014. His research has focused primarily on fungicide breakdown in the environment and snow mold diseases on golf course turfgrass.

NOTES FROM THE NOER

Complete the registration form below and mail with payment to:

WTA / O.J. Noer Facility / 2502 Highway M / Verona / WI / 53593

You may also register online by going to www.wisconsinturfgrassassociation.org

You may fax completed forms to 608-845-8162. Registrations must be received by December 31st, 2018. Registrations received after December 31st, will be an additional \$10 per person.

If you plan on participating in the webinar, make sure your email is included in your registration information. You will be emailed the webinar link by January 4th, 2019. We understand that Wisconsin weather can quickly change. If for some reason your plans change and you are unable to attend at the Pyle Center, contact Audra and she will make sure you get the webinar code.



Company Name _____

Mailing Address _____

City/State/Zip _____

Phone Number _____

Email Address _____

List of names that will be attending at the Pyle Center _____

Non-WTA member \$50 ea X ____ = \$ _____

WTA member \$40 ea X ____ = \$ _____

2019 WTA Membership Dues \$150 ea \$ _____

Total Amount Enclosed \$ _____

Credit card # _____ Exp date _____ Security code _____

If you have any questions, contact Audra at audra.anderson@wisc.edu or 608-845-6536. Registrations must be received by December 31st, 2018.

Kurt Hockemeyer

By Josh Lepine, Certified Golf Course Superintendent, Maple Bluff Country Club &
Ben Labarre, Golf Course Superintendent, The Legend at Bristlecone

Author Note: Thank you to everyone who participated in the Membership survey. The information and feedback obtained was invaluable. The requests for more member spotlight stories inspired me to start this column. I hope to randomly highlight a few members each edition from all geographic areas, facility types and membership classifications. It may take me 20 years to get to everyone in the directory but please be ready for that phone to ring and be prepared to share stories, photos and information about YOU!

Name: **Kurt Hockemeyer**

Company Position: **Turfgrass Diagnostic Lab Manager**

Years as WGCSA Member: **3**

Membership Classification: **Honorary**

18 Holes With Kurt Hockemeyer

1. How did you get started in the turfgrass industry? I grew up on a dairy farm and loved working outside. My dad and grandpa ran a small tree nursery so I was always outside working with plants. In high school I started golfing with my older brother as my coach and I really enjoyed it. Then once I started college, it took me two and a half semesters before I realized that there was such a thing as the turfgrass industry! I thought that would be the perfect blend of my love of plants and the outdoors with my enjoyment of golf. I then transferred to Purdue University's main campus in West Lafayette, IN, and completed a couple of golf course internships near Washington D.C. and Savannah, GA, as I worked towards my B.S. in Turf Science. I realized at some point that I really enjoyed the research part of my undergrad and so decided to pursue my M.S. Dr. Rick Latin took me on as a research assistant and a few years later I had a master's degree. I worked at the University of Minnesota for about a year before coming to UW-Madison.

2. What is the most rewarding part of your career? I really enjoy the research part of my job. Being able to identify new strategies in turf maintenance, optimizing existing strategies, and then communicating our findings with the end user is the most enjoyable part of my job. This is really the reason I got into research in the first place.

3. What would you consider to be your greatest career challenge? Trying to answer the most relevant questions in research. I could come up with just about any old research project, but finding the research that answers the questions that end users don't even know they are looking for is, in my opinion, the best research.

4. Which three adjectives describes you the best? Fun, laid-back, fluid

5. Tell us about your family. - I've been married to my wife, Jennifer, for 6 years. We are both from NE Indiana. Most of both of our families still live in Indiana so we usually go back there for the major holidays. I have 4 siblings. Two older brothers, an older

sister, and a younger brother.

6. Any pets? We have two dogs. Abbey is an 11 year old boxer mix, and Max is a 2 year old lab mix.

7. What drives/motivates you every day? I really enjoy the unexplored frontier part of the research we do at the OJ Noer Research Station. Every year, we contribute in some small way to the pool of knowledge that turf managers use to do their job. We may not always be contributing ground breaking stuff, but every little bit matters

8. Who Would You Admire? My graduate advisor, Dr. Rick Latin. He conducted turfgrass research for many years at Purdue University. He was well respected among turfgrass researchers, but also among golf course superintendents as well. He is the one who taught me the tenets of scientific research. He always asked great questions, which led to great research projects. But he was also simply a great person and I learned much from him during my years there.

9. Who is the person in history you'd most like to meet? Benjamin Franklin. He had such a great scientific curiosity and his influence can be felt in our country to this day. I think that would be such an interesting conversation to hear his thoughts about today's world.



Top: Max is not fazed by the cold or snow and he constantly wants his frisbee thrown for him.

Left: Abbey, Kurt and Jennifer's older dog hates the cold and can often be found sunbathing. Abbey is very "chill".

MEMBER SPOTLIGHT

10. What's a fun fact that people don't know about you? I really enjoy playing music. I played the alto saxophone in high school and college. I participated in both concert band and marching band, including being a member of the All-American Marching Band at Purdue University. I also won a state championship in marching band in high school. I love music so much that I was actually a music major in college for a while. I also taught myself to play the piano.

11. What do you do in your spare time, favorite hobbies? My wife and I love the outdoors, so we try to go camping and hiking every summer. I really enjoy fishing and go up north to Grand Rapids, MN every summer to visit family, but mostly to fish. I follow college basketball and college and pro football. I love to golf but don't get out as much as I'd like. I also enjoy video games and movies as well.

12. If you could go anywhere in the world on vacation, where would you go? I would love to visit Germany. My ancestors came from Germany, and my wife and I have always wanted to visit Europe. Not even one of the major cities, but a small to mid-size town with tons of history would be perfect.

13. What is the one thing you would like to learn/accomplish someday? As much as I love fishing, I've still never ice fished, so I hope to do that this upcoming winter. In a more professional sense, I would like to become a respected researcher in the turfgrass world. In order to do that I need to keep contributing relevant research, keep helping turf managers through the TDL, and keep working hard.

14. What is your favorite turf management related tool or technique? The computer program, ARM. Without this tool, conducting research would be 1000x harder. This allows us to set up trials, randomize plots, calculate mix sizes and product amounts, print out bottle labels and plot signs, collect data, analyze data, and everything in between.

15. Favorites:

TV Show: How I Met Your Mother, Great British Baking Show

Movie: The Fifth Element. The Lord of the Rings. Anything Star Wars.

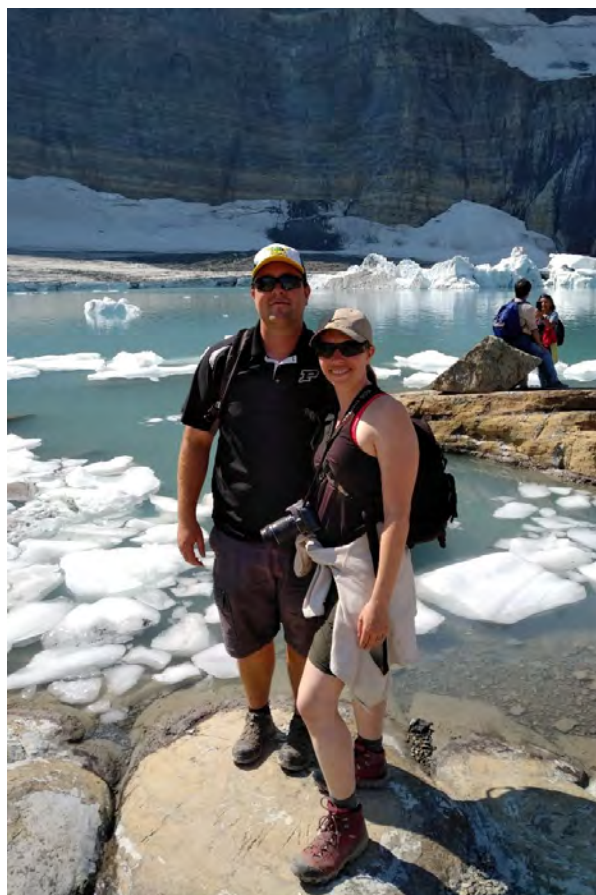
Food: Mexican

Sports Teams: Purdue Boilermakers and Indianapolis Colts

16. Do you golf? Handicap? Best shot or golf story? I always say I usually play bogey golf, but that steadily gets worse every year. My best golf story is that I was 1-under through the first 3 holes at Whistling Straights. I should've quit while I was ahead though.

17. Top Bucket List Item? A trip to Europe has been at the top of my bucket list for a while now. I mentioned Germany earlier but Spain, France, Italy, and others would be spectacular as well.

18. If you could provide one piece of professional advice, what would it be? Take pride in your work. But don't let that pride become a detriment to you. That's two pieces, sorry. 🌱



Top Right: Kurt and Jenn visiting Glacier National park in Montana this past September. The photo shows the couple in front of Grinnell Glacier.

Right: Kurt with a good smallmouth bass he caught on Bass Lake near Grand Rapids, MN.

2018 Fall Business Meeting

By David A. Brandenburg, Editor, The Grass Roots

A small but interested crowd was on hand for the 2018 WGCSA Fall Business Meeting and Election at the American Club in Kohler on November 28th. The meeting held a hour before the Golf Turf Symposium provides the members updates on association activities while allowing members input on key decisions to guide the associations future.

As with every "business meeting" there are the boring roll calls and reading of the minutes but for WGCSA members the officer and committee reports are full of valuable updates and information. Jon Canavan started the meeting by thanking his fellow board members and Chapter Manager Grams for their help during his 2 years at the helm. He also thanked Josh Lepine for taking the lead on the BMP project to get this valuable project off the ground.

Chapter Manager Brett Grams discussed the value of the upcoming Par4 Research Online Auction and the need for additional golf clubs to offer their properties to the cause. The auction has become a key to our research funding and we have a good following of bidders to purchase the golf rounds/packages who raised almost \$8,000 in 2018.

One of Brett's main responsibilities besides maintaining the books and membership roster is securing our Industry Partner Contracts to fund this magazine, our directory, the hospitality room at GCSAA, and sponsorship to reduce costs for our meeting and activities. If you use a vendor who could benefit from advertising in these pages or on the chapter website please forward their information to Brett.

Looking ahead to 2019 Grams is eager to work with the Equipment Manager members and grow their educational opportunities.

He was clear to remind everyone that our educational opportunities are open to any member. A superintendent can go to the assistant superintendent education, a mechanic can go to the chapter education meetings and an assistant or superintendent can go to the mechanics educational offerings. So in other words if the program looks interesting to you, feel free to register and attend despite which committee is putting on the session.

Membership Committee updates were next with Chairman Ben laBarre. Fortunately our membership levels have been staying consistent for several years although the membership is aging slightly. The Equipment Manager category should increase numbers while increasing educational opportunities for all members.

Next Scott Anthes, Chair of the Golf and Arrangements Committee, went over the schedule of events and thanked all the host sites he has worked with in the past. Some dates have to be filled in yet but will be in the next few weeks. If your club is interested in hosting an event contact Chapter Manager Brett Grams for more information. At this point our June Golf Meeting is still looking for a home.

Education Chair, Garrett Luck reviewed the opportunities from 2018 and the progress on securing good topics for 2019. Feel free to pass along to him any suggestions you would like to learn about.

Brian Bonlender covered the Governmental Relations portion with updates on WOTUS (Waters of The United States) and the long expected changes to these federal rules. Minneapolis has introduced a ban on glyphosate on park property after the recent cancer lawsuits and there is a good possibility we will see an increase in H2B workers eligible for work in 2019.

WGCSA President Elect Josh LePine presents outgoing President Jon Canavan with his past presidents plaque at the Fall Business Meeting.



2019 Event Schedule!

January 8 - Winter Turf Conference - Pyle Center, Madison
February 2-7 - Golf Industry Show and GCSAA Conference, San Diego Convention Center
February 6th (Wednesday) GIS Wisconsin Room - Revel-Revel 868 5th Ave, San Diego, CA
February 27 - (Wednesday) Northern Great Lakes GCSA Educational Conference - The Waters in Minocqua
TBA - WGCSA Spring Business and Education Meeting, South Hills G&CC, Fond du Lac
TBA - WGCSA Assistant Superintendents Seminar
TBA - WGCSA Equipment Manager Seminar
March 13-14 - Reinders 24th Green Industry Conference - Waukesha County Expo Building
April 24th (Wednesday) - WPGA/WGCSA Super Pro - Blackhawk CC, Madison
May 1 - National Golf Day - GCSAA - Washington DC
May 13th (Monday) May Meeting (Morning Start) - Racine CC, Racine
TBD - WGCSA June Meeting
July 30 - WTA Summer Field Day - O.J. Noer Research Facility, Madison
TBD - Joint NGLGCSA/WGCSA Member Guest - Fox Valley GC, Kaukauna, WI
September 16th (Monday) - Wee One Fundraiser - Pine Hills CC, Sheboygan
September 30th (Monday) WTA Golf Classic - Tuckaway CC Franklin, WI (Tentative)
TBD - Couples and Guest Evening - Madison
December 4 - 5th - 54th Golf Turf Symposium - Amercian Club, Kohler

Visit our website at www.WGCSA.com for the most up to date calendar and registration forms.

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Josh Lepine gave an update on the BMP process and highlighted we have contracted with Stacey Kingsbury to help in the process and the committee and Stacey have had one tele-meeting to get organized. This project is being done jointly with the Northern Great Lakes Chapter with support from the WSGA and WPGA.

Kingsbury has worked with Nebraska, Maryland, Florida and New York among other chapters so we are in good hands.

The association has announced a CALL FOR PHOTOS to help produce our BMP documents. A complete description of what is needed can be found on the chapter website at WGCSA.COM and although photos are not needed quite yet, now is a great time to organize what you have so they are ready to go when the chapter asks for them to be sent in.

The Treasures Report was handed out and is showing a estimated year end revenue over expenses of \$10,000 with income of \$165,000 and expenses of \$155,000. A complete recording will be presented at the Spring business meeting.

The most important parts of the Fall meeting are the election of officers (see the results below) and the vote to approve scholarship and research donations. (Shown on page 35.)

After the voting, Brian Bondlender gave an update from his recent trip to Lawrence for the Chapter Delegates Meeting. Besides meeting the candidates for GCSAA board

service the group was presented with valuable background information on the association and how they can help chapters with education and administration. They also discussed many different ideas and possibilities for the future.

On the GCSAA election in February will be a proposal to create a Golf Course Friends Membership category for golfers and potential advocates for the industry. Educators with an interest in golf would be good candidates for this membership class with dues between \$50 and \$75.

They are also considering starting a Facilities Membership category for golf courses that have not had a GCSAA member in 5 years and a suggested limit on dues or green fees for the course. Dues for this category would be \$200 and steps will be taken to ensure a club does not simply stop paying GCSAA Member dues to simply achieve the loser cost level.

WGCSA business finished up with a vote on bylaw changes to create a EM (Equipment Manager) Member classification for employees of current WGCSA A or B members. With dues at \$50 hopefully this will be a cost efficient tool to help educate our equipment managers through seminars and these pages. This membership is exempt from the GCSAA dual membership rules.

The new proposal passed unanimously. If you have an interest in helping on a WGCSA committee or have feedback please contact President Josh Lepine. ✓



WGCSA Chapter Manager Brett Grams leads the Fall Business Meeting at the American Club in Kohler.

Election Results

- **President - 1 Year - Josh LePine, CGCS, Maple Bluff Country Club**
- **Vice President - 1 Year - Jeff Barlow CGCS, Waupaca Country Club**
- **Treasurer - 1 Year - Scott Anthes, Brown County Golf Club**
- **Secretary - 1 Year - Garrett Luck, Hidden Glenn at Bentdale Farms**
- **Director - 2 Year - Benjamine LaBarre, Legends at Bristlecone Pines**
- **Director - 2 Year - Tim Schmidt, Butte Des Morts Country Club**
- **Immediate Past President Jon Canavan will serve on the board during LePines Presedential term.**
- **Brian Bonlender, West Bend Country Club has a year remaining on his directors term.**
- **Mike Bremmer, JW Turf had a year remaining on his directors term but has left The Wisconsin Club to persue a different opprotunity and has given up his spot. Tim Wegner, Brown Deer Park, Milwaukee has been appointed to fill that term by President LePine.**
- **Rob Johnson, Waupaca Sand and Solutions serves as our Affiliate Representative.**
- **Kate Lifke, Trappers Turn Golf Club serves as our Class C Representative.**
- **Austin Wright, Sand Valley Golf Resort will serve as our first EM (Equipment Manager) Representative.**

Scholarship and Research UW Research Requests with Timeline

<u>Name of Project</u>	<u>Requested by:</u>	<u>2018 Funding</u>	<u>2019 Funding</u>	<u>2020 Funding</u>	<u>2021 Funding</u>	<u>Project Totals</u>
Turf Pest Management Website Update/Creation	Koch, Soldat, Williamson	\$2,500				\$2,500
Dollar Spot Control Using urea and iron Sulfate (EIFG, UW, UM)	Koch, Soldat, Horgan, Bauer	\$10,000	\$10,000			\$20,000 (our portion)
Growth Model to Optimize Nitrogen Applications on Greens	Dr. Soldat		\$9,975	\$9,975	\$9,975	\$29,925
Future Research				?	?	
Annual Totals		\$12,500	<u>\$19,750</u>	\$9,750		\$52,425

Slides from the Fall Business Meeting show the association's scholarship and research funding for 2018/2019. 2019 giving was approved as presented by those in attendance at the meeting.

Scholarship and Research

	<u>2018 Budget</u>	<u>2018 Projected</u>	<u>2019 Proposed</u>
J.R. Love Scholarship	\$ 1,500	\$ 1,500	\$ 1,500
Legacy Scholarship	\$ 2,000	\$ 2,000	\$ 2,000
M. S. Miller Literary	\$ 1,000		\$ 1,000
TDL Donations	\$ 3,100	\$ 3,100	\$ 3,100
PAR4 Research Donation	\$ 6,200	\$ 6,883	\$ 6,500
UW Research Funding	\$ 12,500	\$ 12,500	\$ 19,750
EIFG	\$ 500	\$ 500	\$ 500
Other/OJ Noer Foundation	\$ 2,000	\$ 2,000	\$ 2,000
NEW Turf Scholarip	\$ 1,500	\$ 1,500	\$ 1,500
Great Lakes Certificates	\$ 1,500	\$ 2,226	\$ 1,650
Total Scholarship & Research	\$ 31,800	\$ 32,209	\$ 39,500



Kentucky Bluegrass Cultivar Performance

By **Doug Soldat, Ph.D.**, Department of Soil Science, University of Wisconsin – Madison and
Nick Bero, Research Specialist, Department of Soil Science - University of Wisconsin - Madison

Kentucky bluegrass has an incredible range of genetic diversity. I like to call it the *Canis lupus familiaris* (the latin name of the domestic dog) of grasses. We have bluegrass cultivars that are dark green and ones that are light greens, cultivars that start growing in April, and others that take until late May to wake up. We have cultivars that get hammered by rust, and some that don't. Some cultivars can handle being mowed at one inch, others would fade away quickly under that type of management. The Arkansas research group found some bluegrasses last only three weeks without water, while others can maintain green cover for more than five weeks. While other cool season grass species have decent genetic variability (ryegrass, tall fescue, bentgrass, etc), I relate that amount of variability to what you see in cats, sure the breeds look different, but the differences aren't as large as what you see between a Great Dane and a Pomeranian.

You are probably familiar with the National Turfgrass Evaluation Program (NTEP), which is the main way data is generated about grass cultivars across the US. We have had multiple NTEP trials at the OJ Noer Facility every year since the Noer was built in the mid-1990s. You can visit NTEP.org to check out the performance of cultivars at locations all over the US. But when you do that, you'll quickly find that the NTEP program is filled with mostly experimental cultivars which make the data not very useful for consumers. Instead of evaluating what's on the market, it prioritizes new cultivar development. To fill that void, industry and university representatives formed the Alliance for Low Input Sustainable Turf (A-LIST for short). A-LIST focuses on evaluation (and eventually labelling) of grass cultivars that exhibit the best qualities like high visual quality under lower input situation. The current list of A-LIST cultivars is shown in **Table 1**.

We were excited to install our first A-

Table 1. The current A-LIST of Kentucky Bluegrass Cultivars as of Spring 2018. To receive A-LIST approval, a cultivar must have acceptable turfgrass quality and be in the top statistical group for drought tolerance for two years at two or more locations. It also must be evaluated in an NTEP trial.

A-LIST Approved Cultivar	Company
Mercury	DLF Seeds and Science
SR 2284	DLF Seeds and Science
Shiraz	Lebanon Turf
Zinfandel	Lebanon Turf
Blue Note	Mountain View Seeds
Legend	Mountain View Seeds
Hampton	Landmark
Fullback	Landmark

LIST trial at the O.J. Noer Facility in fall of 2017 to complement the NTEP data that we've been generating over the years. We planted twenty-three Kentucky bluegrass cultivars from four different seed companies on Sept 12, 2017 (**Table 2**). (One criticism of A-LIST is that they have not achieved participation from all the turfgrass breeders yet.) We evaluated

these grasses for establishment speed, green color, and visual quality using standard methods that are published on the A-LIST website. The grasses were mowed as needed at 2.25 inches, irrigated, and fertilized at approximately 2 lbs N/1000 square feet per year. We were not able to evaluate dry down and drought tolerance with this trial.



Figure 1. This picture from a Kentucky bluegrass NTEP trial at the O.J. Noer Facility in early spring captures the tremendous genetic diversity of Kentucky bluegrass cultivars.

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DEPARTMENT OF SOIL SCIENCE

University of Wisconsin-Madison

The data we are reporting here are from year 1, the establishment year. Multiple years of data are preferable over single years (and multiple years are required for A-LIST approval), but the establishment success is usually indicative of good performance. I will just report the grasses that had the top performance (indicated by having an “a” in the statistical analysis, of “g” in the case of rust) for quality (**Table 3**), color/NDRE (**Table 4**), green cover (**Table 5**), and rust resistance (**Table 6**).

In our trial four of the twenty-three

grasses were previously accepted for A-LIST approval based on good performance in other trials. These grasses also rose to the top in our trial. In fact, all four made the top statistical group for quality, percent green cover, and rust resistance. The only group that they did not all show up was color/NDRE, which was a very exclusive group of only three grasses.

In our first year of data, the top performers that have not yet been A-LIST approved appear to be Merlot, MVS-130, and NAI-13-14. These grasses showed


up in the top statistical group in at least three of the four categories we have evaluated so far. Keep in mind that part of A-LIST approval is drought tolerance, which we did not evaluate. Based on the preliminary results of this trial, and in no particular order, Fullback, Merlot, MVS-130, Hampton, Legend, Zinfandel, and NAI-13-14 appear to be the best choices of the grasses evaluated for roughs and green banks, etc. in Wisconsin. If you have a bluegrass renovation project next summer, swing by the O.J. Noer for a personal tour and discussion. 

Table 2. The Kentucky bluegrass varieties being evaluated for A-LIST approval at the OJ Noer.

Company	#	Variety
Lebanon	1	Bordeaux
Lebanon	2	Zinfandel
Lebanon	3	Champagne
Lebanon	4	Merlot
Lebanon	5	LTP-11-41
Landmark	6	Hampton
Landmark	7	Bluebank
Landmark	8	Fullback
Landmark	9	A12-7
Landmark	10	NAI-13-14
Landmark	11	A11-40
Mountain View Seeds	12	A12-34
Mountain View Seeds	13	A11-38
Mountain View Seeds	14	MVS-130
Mountain View Seeds	15	PPG-KB 1320
Mountain View Seeds	16	LEGEND
Mountain View Seeds	17	PPG-KB 1131
DLF Seeds	18	SRX 2758
DLF Seeds	19	SR 2150 (SRX 5321)
DLF Seeds	20	Jackrabbit
DLF Seeds	21	SRX 466
DLF Seeds	22	Keenland
DLF Seeds	23	Martha (A06-46)

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Table 3. Top performers in visual quality.

Grass	Visual Quality (1-9)
Fullback*	6.07 a
Merlot	5.95 ab
MVS-130	5.89 abc
Hampton*	5.86 abc
Legend*	5.84 abc
A11-40	5.70 abcd
NAI-13-14	5.66 abcde
Zinfandel*	5.66 abcde
A12-7	5.59 abcdef

* previously A-LIST approved



Table 4. Top performers in color and vegetation health (estimated from NDRE).

Grass	NDRE Value (0-1, 1=best)
MVS-130	0.381 a
Merlot	0.376 ab
Zinfandel*	0.369 abc

* previously A-LIST approved

Table 5. Top performers in percent green cover (establishment rating).

Grass	Mean % Green Cover
Fullback*	70.5 a
PPG-KB 1131	68.1 ab
Merlot	66.9 abc
Martha	66.2 abcd
Zinfandel*	66.0 abcd
A11-40	66.0 abcd
Hampton*	65.9 abcd
Bluebank	65.8 abcd
Legend*	65.6 abcd
A11-38	65.4 abcd
A12-7	65.0 abcde
NAI-13-14	64.4 abcde
Jackrabbit	63.8 abcde
Keenland	63.1 abcde
SRX 466	62.7 abcde
A12-34	61.3 abcde
LTP-11-41	61.0 abcde
SR 2150	60.8 abcde

* previously A-LIST approved

The tables show results from A-List (Alliance for Low Input Sustainable Turf) turfgrass trials conducted at the O.J. Noer Turfgrass Research and Educational Facility in Verona.

If you are planning to replace some of your turves during a future project feel free to visit the Noer Center and view the plots and discuss your options with Doug or Nick.

Table 6. Top performers in rust resistance (lower is less rust)

Grass	Rust Rating (1-9, 9=all rust)
Zinfandel*	1.8 g
Merlot	1.8 g
SR 2150	2.0 fg
NAI-13-14	2.0 fg
A12-34	2.5 efg
Legend*	2.5 efg
Fullback*	2.5 efg
MVS-130	2.8 efg
Bluebank	2.8 efg
A11-38	3.0 defg
Hampton*	3.0 defg
PPG-KB 1131	3.0 defg

* previously A-LIST approved

53rd Wisconsin Golf Turf Symposium

By David A. Brandenburg, Editor, The Grass Roots

The 53rd Golf Turf Symposium was a success with good education, good attendance and good camaraderie as expected. The committee did a great job selecting speakers to cover the issues important to our members and their employers. It was nice to see a large contingent of attendees from Illinois this year.

The American Club is second to none and although we had a little snow the morning of the second day moving the event back to late November or early December still remains a good choice from our late October days of past.

It was my second year staying at the American Club and I was again impressed by the accommodations and service. It is a special place and at a great price for our group if you want to consider staying next year.

Thanks again to Jaime Staufenbeil who does all of the behind the scenes work to make the Symposium happen. And thank you to our silent industry partner Milorganite who keeps your cost of attending down by paying for all the speaker travel and accommodations. They also allow Jaime to spend her time making all the arrangements with the American Club and speakers while other staff designs the program and advertising.

We received a number of surveys back after the event but if you have feedback or ideas for future topics and speakers feel free to send them in to Brett at bgrams@wgcsa.com.

The way the calendar falls next year the symposium will be December 3rd and 4th so mark your calendars now to attend. ✓



Left: The program for the 53rd Wisconsin Golf Turf Symposium, Getting Back to Basics.

Center: Newly elected President Josh LePine provides the welcome and opening remarks while serving as the days moderator.

Below: The crowd from the podium.





Dr. Koch provided Dollar Spot 101: A Comprehensive Look At Our Most Sprayed For Disease.

Paul stated we cannot rely on chemicals alone for control but we also need a good understanding of this pesky disease. He quickly went through the history and biology of Sclerotinia homoeocarpa or Clarireedia as the genus is now called with 4 species, C. bennettii, C. homoeocarpa, C. jacksonii and C. monteithiana.

Dr. Koch covered biological and chemical control along with his recent work with Iron Sulfate and Nitrogen to control the disease. It is still early in the Iron Sulfate study but it has shown promise when applied at 7 days.

Paul also introduced a new certificate course the UW-Madison campus is going to offer in Professional Turfgrass Management. Numbers in the 4 year turf program have dwindled in recent years but hopes are some students will be interested in a program with a shortened semester over 2 years. The new program will be modeled after and in conjunction with the ag short course that has been offered since 1885.



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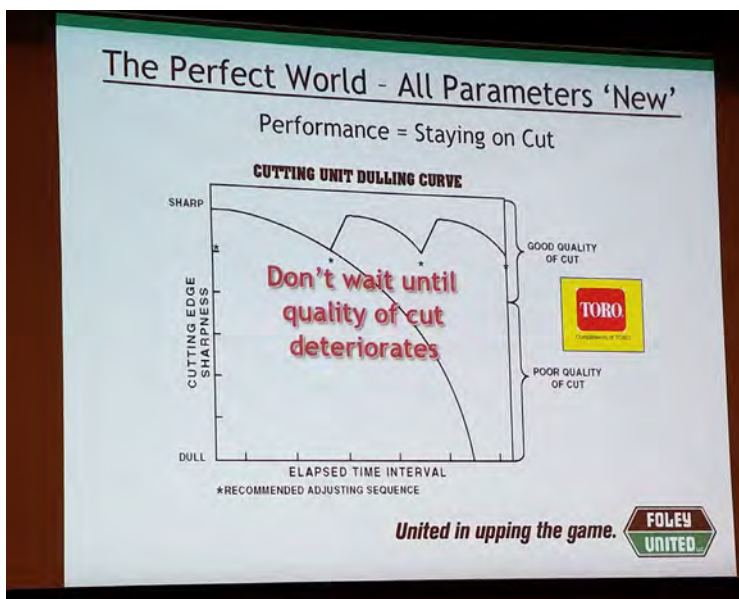
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Greg Turner, with Foley United covered Reel Science and Optimal Cut Technology.

Greg has worked with grinders and quality of cut issues for over 18 years and was able to share his experience and education with us without being commercial towards any brand of equipment or grinder.

Greg started out by explaining we often perform reel maintenance by "tradition" without a firm knowledge of why we do what we do or why we do it. Manufacturers have spent a great deal of time and money to bring new technology to the market and we owe it to our properties to adapt with the changes. Equipment managers have to collect and use OEM specifications for reels and realize the angle and methods that work for Toro or John Deere may not work for Jacobsen reels and vice versa. Following OEM specifications does not guarantee success but it will be near impossible to find success without starting with the proper specifications.

A reel has 4 principle angles which have to be ground as designed to achieve a good quality of cut. The reel has the relief angle and rake angle while the bedknife has the top and front angles.

Turner explained the need to "stay on cut" and as shown in the slide above it is best to adjust reels before they are let go to far or grinding may be the only way to bring them back. He discussed the debate between contact or no contact and said for Toro, light contact is best and although John Deere and Jacobsen teach a gap of .001-.003 it is probable light contact is achieved when the reels are on the ground in operation.

We all laughed when he said most bedknife screws are torqued with a hammer and chisel but the screws do have researched specifications for torque settings we should follow. Greg suggested we use the newer "borazon" grinding stones for best results especially with the new harder reel stock.

In closing, grinding is not just sharpening, it is a re-shaping of the reel. Sharp is good; sharp and reshaped is better; sharp, reshaped and relief to OEM specifications is best.

If you want to learn more, Greg is presenting twice at the GIS in San Diego.



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Brian Mavis of Mavis Consulting presented Physical Testing for Golf Courses.

Brian gave us an in depth look at not only how to soil test but what we should be looking for in ways of organic matter and sand / soil composition.

As turf managers it is easier to manage what you know. Programs can be written based on the chemical, physical and biological properties we obtain from soil tests. Work can be performed to fix deficiencies or work can be eliminated if it is not needed.

Bad data is worse than no data. Proper sampling of soils depending on the type of test is imperative to getting accurate results from your samples.

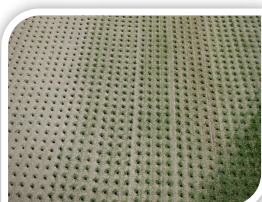
Putting greens need not only need properly sized particles but also properly shaped particles with proper hardness to reduce breakdown over time to fine particles. These sand particles need to be mixed with organic matter in proper percentage based on the number of rounds and be mixed properly without severe layering.

He discussed solid tine aerification versus pulling a core and although solid tine is not the norm or accepted practice, it can be successful in the right conditions. Research has shown topdressing plays a bigger roll in organic matter management than aerification. Topdressing before a solid tine aerification allows more sand into the holes before traffic closes the holes up. A heavy application of the proper sand before winter is an excellent opportunity to apply more sand.

Depending on your tests of course the slide below-left gives a minimum goal of surface disruption from a typical aerification program. Mavis provided a lot of valuable information for attendees to use on their course to guide their programs... after proper testing of course.

Tine Size, Spacing & Frequency

- Approximately 20% Surface Area/ Year
- Tine Size **.625"** - .75"
- Tine Spacing 1.5" x 2" to 2" x 2.5"
 - If too tight then partially closing hole behind before filled?
- Frequency: 2 x's / year
 - 1 x / year = may not be sufficient



High Water Tables

- We often hear, "I don't want to go too deep or I will be in the water table."
- Must create an airspace that is lower than the existing water table to be effective
- Seepage depths between two and eight feet deep
- The deeper the airspace, the wider the V that is created in the water table

The diagram shows a cross-section of the ground with a water table. A trench is dug, and a pipe is installed. The water table is shown dipping down into the trench, creating a 'V' shape. Labels include: 'Lateral Area of Influence', 'Intermediate Layer', 'Water Table', 'Water Surface While Pumping', 'Cone of Depression', 'Pumping Water Level', 'Unconsolidated sand and gravel', 'Gravel', and 'Condition is after treatment'. The source is cited as 'Turf Drainage Co. of America'.

Dennis Hurley from Turf Drainage Company of America gave a talk on Analyzing Drainage Problems and Applying Proper Drainage Techniques.

Dennis gave us an exhilarating talk on the world of drainage. He talked fast and put a lot of information out in a short time. If you were like me and thought a simple french drain with a few catch basins could solve both your surface and seepage water problems at the same time, you are mistaken.

Hurley gave some great information on low cost fixes to collection of puddled or streamed surface problems and how to locate collection sites to catch the water before it is a problem. French drains may work for seepage problems but do not work for long for surface water problems because contaminants will quickly clog your pores at the surface. Seepage drainage is often more expensive and expansive with multiple lines needed due to the limitations to collect water in most soils.

From the slide above Dennis explains why seepage drainage needs to be deep to be effective. The deeper it is installed the more cost is incurred but the results are better.. He also explained why sand, not pea gravel is often the best backfill material for seepage drainage. Hurley also explained "self cleaning velocity" and how pipes need proper slope to keep from being filled by contaminants over time.

He showed some easy to maintain sump and siphon systems to allow the pipe to be at proper grade when the site does not allow it. It was a great talk full of new and old ideas on how to drain our properties.





Dr. Rick Latin, Emeritus Professor of Plant Pathology, Perdue University discussed Scheduling Fungicides for Turf Disease Control: Three Approaches.

Dr. Latin has recently retired and moved to South Carolina and actually lives on Pinehurst, a move he highly recommends.

He opened with the principle that a pathogen must be active in order for the fungicide to be effective. A dormant fungi will not take in the fungicide. He also described how fungi grow from the tip which is why they are often in a circular pattern. The weakness of fungicides is they will kill the growing point of the fungi but not every cell inside.

We get better control when we use the right product and the right time and at the right rate and not because fungicides are active for longer periods of time. Most fungicides residues are depleted over 7 to 14 days.

Latin presented the 3 scheduling approaches of damage based, weather based and calendar based. In most cases a combination of calendar and weather based will provide the best results. Damage based control is weak because by the time you treat the symptoms the fungi are large and have more cells. It is best to control the disease while it is still small.

Chris Tritabaugh, Golf Course Superintendent at Hazeltine National Golf Course discussed Clipping Volume: Why we measure it, and what it tells us.

Chris was slow to collect clippings but quickly saw the value in comparing one green to another and was surprised by the differences. At a top club like Hazeltine expectations are high and collecting clippings can quantify what is going on green to green to allow changes to provide consistent conditions throughout the property for the members.

Chris uses a spreadsheet and we can find a similar one on the Greens Keeper program. With a little setup time to enter green sizes the program will change your totals collected per green to volume per 1000 sq. feet or sq. meters or any measurement you want for a number that is comparable green to green and day to day.

With a quantitative number Tritabaugh could see a difference in greens, equipment and even operators and how they walk with a mower.

If you are on Twitter there is a lot of conversation with the hash tag #clipvol you can follow and research. As with any new tool, adapt it when and how it works for you.

One thing to consider is to obtain consistent clipping volume green to green, future applications of Nitrogen will have to be inconsistent which can be done with granular applications or the new GPS Sprayers.



Bob Vavrek, Central Region Director, USGA Green Section gave a Year in Review rather than the annual recap.

As a turf manager you never wish ill will on another property but in some ways seeing damage from weather, soil problems and other stresses can bring a sigh of relief that we are not alone with our problems and things could be worse.

Vavrek centered around water issues, a fitting topic for this year as rain was abundance throughout the region. Too much water, a lack of drainage, a lack of aerifying all can lead to turf loss. Add winter to the mix where water gets trapped under snow and ice and you can have a bad situation.

Bob presented a case of a course that had ice damage and wanted to recover but also wanted to stay open for play. In hindsight, the course should have gone to temporary greens and seeded and covered or sodded the bad areas to be in peak shape by mid summer.

Lucky for us in the Midwest Goose Grass is near and may be coming to your course soon. This hard to control weed can become impossible to control on driving range tees where pre-emergent herbicides are not used. On other areas it can take multiple herbicide applications to gain control. One more thing to look forward to.

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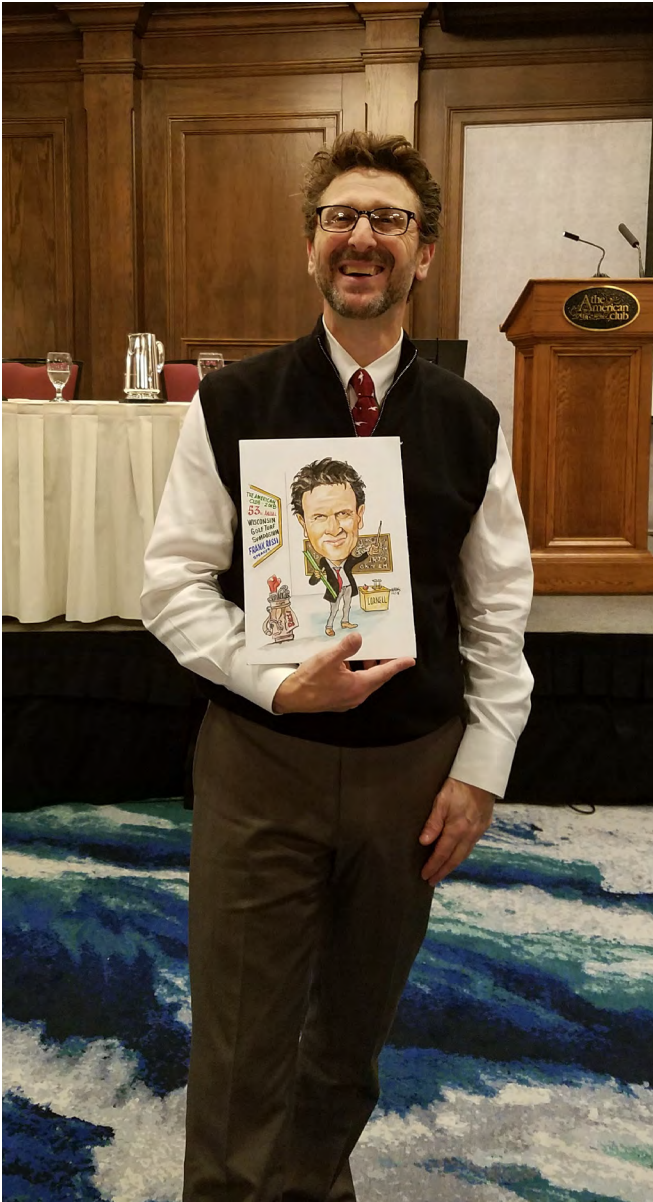
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Dr. Frank Rossi, Cornell University gave two talks. He lead off the second day as keynote with “The Basics are Best!”, and finished the morning session off with “The Basics of Playing Surface Performance.”

It is a pleasure to have Frank back in the state and speaking at the Symposium. His first talk centered around knowing your land, knowing your needs, and minding your waste. How we can use Best Management Practices to do what we do, but do it better with less impact on surrounding properties or the environment.

He showed data highlighting (for whatever the reason), our climate is changing and heavy rain storms are increasing. (See graphic page 47.) What can we do as property managers to not cause negative change. How can we do our jobs with the least amount of inputs? How can we prepare our courses to survive the stresses of weather extremes?

Frank suggested we use data from moisture meters, soil tests and other methods to make good decisions when maintaining our properties.

To end the morning session Frank returned to discuss playing surface performance and started with explaining the best greens are:

- Resilient and will bounce back from stress such as wear, drought or wet conditions.
- Firm, which Rossi called the “signature” characteristic of high performance putting greens.
- True, which is a hard to measure but often goes along with a low mowing heights and firm conditions.
- Permeable to allow air and water into the profile.

Firm, smooth and permeable can only be reached with the regular use of the right percentage of course sand. The challenge is, course sand is hated by mechanics and can be hard to incorporate into the turf canopy or it will be picked up by the mowers.

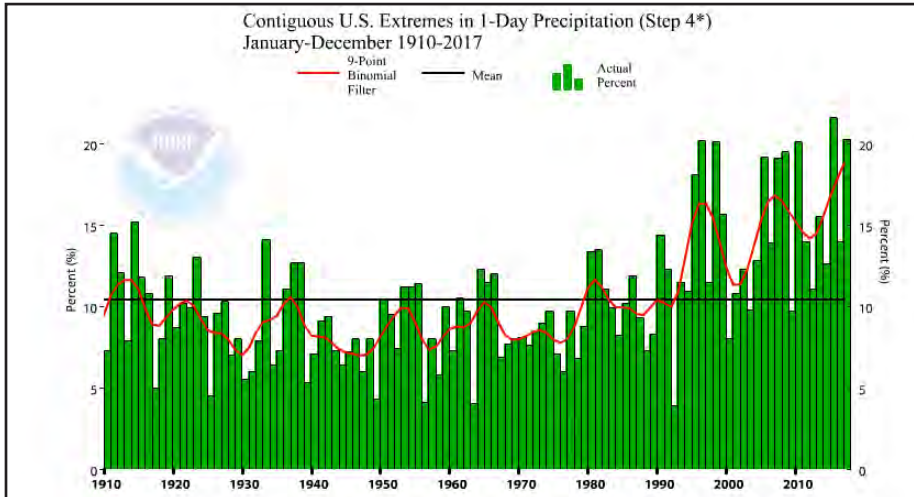
Regular mowing and rolling are also important and with the right soil profile daily rolling has shown to be beneficial while improving green speed with firmer, smoother conditions.

Rossi also discussed recent research with the spike marks and newer spikes. Since golf shoes are a 600 million dollar industry the manufactures wanted to be involved in the research. With traffic greens speed reduced around the cup but only 10” no matter the number or amount of traffic.



The Panel of Scott Anthes, (Brown County Golf Course) Patrick Reuteman (Westmoor Country Club) and Garrett Luck (Hidden Glen at Bentsdale Farms) discussed the “basics” of their golf course managment methods.

Each panelist gave a background of their club and discussed aerification, topdressing and poa control practices for their properties and answered questions from the audience.



This slide from the National Oceanic and Atmospheric Administration and shared by Dr. Rossi shows a increase in extreme precipitation events over the past 100 years. Something is clearly happening with the weather or climate per this data.



Our silent industry partner has helped bring you the Wisconsin Golf Turf Symposium for 53 years running. Be sure to thank them for their support in bringing a quality educational opportunity to the WGCSA.



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Retired WSGA Director Gene Haas submitted this drawing of Dr. Rossi. Gene reminisced about sharing the stage with Frank at a previous Golf Turf Symposium. Gene remembers Rossi's talk being scientific while he was just worried about hole locations. The drawing will be mailed to Dr. Rossi and we thank Gene for thinking of us and sharing his talents.

Merry Christmas To You & Yours!

By David A. Brandenburg, Editor, The Grass Roots

Merry Christmas and enjoy the offseason! A few courses allow winter play when they are able but one thing is for sure the mowing season is over. Hopefully you can use this period to organize and plan for next year, take some time off for other activities and to refresh.

Education season is around the corner with the WTA Turf Conference Jan 8th in Madison. This great educational opportunity is available in person or by webinar.

Then the Golf Industry Show is in early February followed by the Northern Great Lakes Golf Course Superintendents Symposium February 27th. Right after that will be the WGCSA spring education, assistants education and the soon to be announced Equipment Managers education. All these along with Reinders Expo March 13 and 14 will provide for a educational winter season,

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Hard to believe but this is my 66th Editor's Notebook, Where has 11 years gone that your publication *The Grass Roots* is on Volume 47 Issue 6 already. A lot changed with technology in the 24 years Monroe Miller served as editor and technology continues to change. 11 years ago I could not have imagined I could do the entire layout on my laptop and send it directly to the printer. Of course they have some work on their end but for the most part it is ready to be printed, trimmed and bound.

Many thanks and salutations to the writers, without whom this would be a boring venture. Their educational and informational articles set *The Grass Roots* apart from other chapter publications. Thank you to our advertisers who allow the Wisconsin Golf Course Superintendents Association to bring you a print magazine when so many other chapters have gone to a electronic newsletters.

Also thanks to Brett Grams our Chapter Manager for putting together and organizing the advertisers while collecting the money.

Hopefully the slower season will entice some of you to type a story and collect a few pictures to send for publication in these pages. All of us would love to see your projects or new methods to provide a better product for your customers. I will be happy to help you put your ideas together for submission. Just call or email at grassroots@wgcsa.com

If you or a staff member is due to renew your Pesticide Certification 3.0 the dates for classes and the test are as follows.

March 6th - Ingleside Hotel, Pewaukee
March 20 - Ingleside Hotel Pewaukee
March 27 - Upham Woods, Wisconsin Dells
April 3 - Metropolis Resort, Eau Claire
April 17 - Comfort Suites Rock Garden, Green Bay
April 24 - Ingleside Hotel, Pewaukee
May 1 - Days Inn Conference Center, La Crosse

There is a record number of job changes to report this month. Gary Huenerberg has left Burris Equipment to be the Steiner Sales Manager for Schiller Grounds Care in Johnson Creek.

Pat Sisk is leaving Milwaukee Country Club to take the helm at Longmeadow CC in Massachusetts. A 1922 Donald Ross Design.

Scott Schaller has retired from North Shore Golf Club in Menasha, Dustin Riley has been hired to replace Scott and Steve Houlihan has been hired to replace Dustin at Oconomowoc GC. Blue Mound will conduct a search for Steve's replacement during the winter.

Mike Bremmer has left his position at The Wisconsin Club to join JW Turf as a salesperson.



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EDITOR'S NOTEBOOK



Scott Schaller has retired after over 20 years at North Shore Golf Club and 32 years of WGCSA Membership.

Above Left: Scott with his uncle Tom Schaller in a May/June 2001 article about the Schaller Families 3 generations in golf

Above Right: The WGCSA Board Of Directors in 1992. L to R Mike Semler, Bruce Worzella, Rod Johnson, Bill Knight, Pat Norton, Tom Schwab, Mark Kienert, Scott Schaller and Mike Handrich



Tom Emmerich speaking at the 2017 Golf Turf Symposium

"After 40 years in the irrigation industry I have decided to call it a career. I want to thank WGCSAA for its support over the years and those members who have trusted me with their business."

Tom Emmerich



Tom Emmerich, Wisconsin's long-time Irrigation Guru has decided to retire. Tom shown here with Steve Abler (left) and Bruce Worzella (right) started with the Acme Lawn Sprinkler Company at age 16 digging trenches and laying pipe.

He then moved on to R&S Parts the Toro Distributor through high school and college at UW LaCrosse until life called him to other jobs for the 8 years after college. But by age 30 Tom was working for Reinders who was then the Toro Dealer a position he held for 7 years before starting his own consulting business in 1992.

Not many irrigation systems were installed in Wisconsin without Tom's design work and help through the bidding and construction process.

Emmerich has been a regular speaker at our events and has penned a few articles for *The Grass Roots* over the years. His expertise and knowledge in the irrigation industry will never be matched and he will be missed. Best of luck to you and Barb in retirement.



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EDITOR'S NOTEBOOK



Congratulations to Nathan Rusch and Ken Peterson for being awarded the 9 Hole Golf Course Appearance and Maintenance Award from the Golf Course Owners of Wisconsin at their recent fall meeting. The award was presented by Mark Robel (Left) of Reinders.

With the recent passing of President George Herbert Walker Bush at the age of 94, I thought it fitting to include this picture from 2000 with some of the crew from Blackhawk Country Club.

From left to right Phil Spitz, Chad Grimm, Nick Herbrand, President Bush, Aaron Goninen, Mike Bremmer, Paul Blumke and Mike Borgroff.

The picture was taken during the 2000 Women's Open at the Merit Club.

President Bush 41's father and grandfather were USGA Presidents and the Walker Cup is named for his grandfather.

George H.W. Bush was a honorary PGA Member, and was inducted into the World Golf Hall of Fame and is well known for his fast play.



Although many of us are used to working with Peter Meyer from National Golf Graphics Jack Schwichtenberg was the original owner and he played with Peter in many of our golf events. As I remember he usually did pretty well in our events either alone or with Peter as his partner. The following is from his Obituary.

Jack Schwichtenberg passed away on Wednesday, November 28, 2018 surrounded by his family. He was born on November 15, 1938 to Charles and Gladys (Daughabaugh) Schwichtenberg. In 1959 he married the love of his life Linda Ruggles.

He proudly enlisted in the United States Marine Corps at age 17, serving two tours in Vietnam. Upon discharge from the service he worked in law enforcement. He owned and operated National Golf Graphics until his retirement.

His main passion was golf. His other passions were golf, and golf.

Ryan Funeral Home in Madison assisted the family and the complete obituary can be found at their website.



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