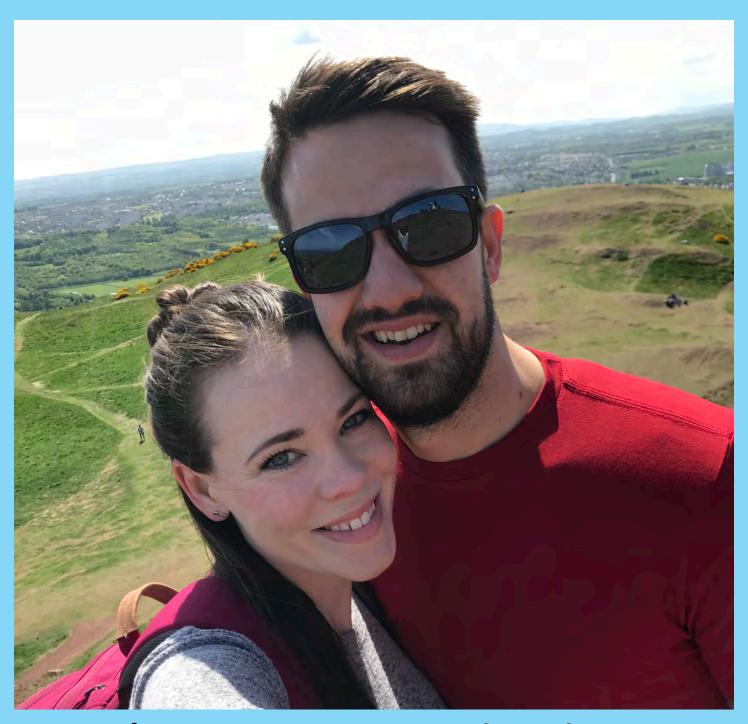
Hole Notes

The Official Publication of the MGCSA Vol. 57, #1 January/February 2022



Welcome MGCSA Executive Director Chris Aumock



Awesome Picture Spreads

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On the cover:

Chris Aumock and wife Michelle enjoy their Honeymoon in Scotland. As the new MGCSA Executive Director, Chris introduces himself and shares his intentions and outlook on pages 8 - 17. Welcome Aboard Chris!

Events Ahead:

Green Industry Bowling Tournament February 23

Outreach Education Series at Fargo CC March 15

Assistant's Pro Forum and Bowling Event March 22



Hole Notes Magazine Vol. 57, No. 1 January/February, 2022

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Presidential Perspective

by Mike Sonnek, Royal Golf Club

What a great feeling to get back together at the 2022 Northern Green! Great

to catch up with colleagues that we have been out of touch with the past two years. Despite the obstacles that we are all aware of, I like to remind people that the 2022 show was a 100% improvement over 2021, which had no in person events.

The MGCSA conducted it's annual meeting after missing 2021 due to the pandemic. Chris Aumock, formerly Superintendent at Meadowbrook Golf Course, was introduced as the new Executive Director. At the risk of going overboard with the thank you's to retiring Executive Director Jack MacKenzie, (which isn't possible), thank you, Jack, for all you have given back to the association going back to well before your time

as Executive Director. On a personal note, I would like to thank you, Jack, for your support, friendship, and encouragement during my relatively brief 24-year stint, compared to yours, with the association. Chris you have some big shoes to fill, but speaking on behalf of the BOD and myself, we are very excited to have you as the Executive Director and look forward to your help in shaping the future of the association.

Additional "thank yous" are required for outgoing President, Scott Thayer. Scott graciously accepted the additional burden of serving an extra year as we wielded our way through the pandemic. Our thanks go out to your family, as well, for sharing you with us. Your leadership during all the uncertainty is much appreciated. I would also like to thank former Vice President, Eric Ritter CGCS, for his many contributions and years of dedicated service to the association.

The annual meeting saw the installation of Mike Sonnek of Royal GC, as President, Matt Cavanaugh of Rush Creek GC as Vice President, and Mark Michalski of Chisago Lakes GC as Secretary/Treasurer. Incoming Director is Kevin Malloy from Medina G&CC. Another big thank you to departing board members, Ex-Officio Matt Rostal and Director Jake Kocak. Your service and dedication are much appreciated.

My team and I at Royal GC had the pleasure of hosting Shop Tours on January 25th, along with David Erickson of Eagle Valley GC, and Brandon Gauster of Oak Marsh GC. Attendance was great and what a fun, relaxed event as we got to "peak under the covers" of our neighbors' operations. Thank you to all the affiliate members in attendance and for your continuing support which funds these great

networking events.

Well, we are in the middle of a real winter this year. Hopefully, many of you are able to attend the GIS and thaw out in San Diego. For those able to attend, I look forward to seeing you at the hospitality night at The Deck.

The following will be a familiar refrain from me in my upcoming articles. I am calling on you to engage with the association. I know we have many talented individuals in our association. Please share your talents and ideas with us. This engagement will make us a stronger association and much better Superintendents. I am honored and humbled to serve as your President. Thank you for your support, and please let us know how we can better support you. Peace out!

Thank you Past President Scott Thayer for your exceptional leadership in 2020-21!

2022 Annual Meeting

Thank you Past President Scott Thayer for your "over the top" efforts supporting the MGCSA and welcome incoming President Mike Sonnek.















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An Introduction: Chris Aumock

By Chris Aumock
MGCSA Executive Director

Sitting here at my dining room table, looking out the window at the gloomy afternoon sky, and the mostly white snow on the ground, something just hit me. This article is about not being back on the golf course this spring. It's an interesting feeling, and that part hasn't fully set in yet. It will be bittersweet when it arrives. I do know one thing though, and that is, I will always be a superintendent, regardless of what side of this industry I'm on. This profession has treated me well and has afforded me some great opportunities and experiences. I will miss seeing every sunrise, or maybe I won't, my kids prefer waking up before the sun every day anyways! Thankfully, I still get to be involved and a part of this wonderful profession. I am thankful and excited for the opportunities this association has for the future. Now, I assume you're all asking, "Who are you, and why are you representing me?"



First, my last name, think Ah-mock. I grew up in Fridley, MN, playing hockey, soccer, and of course, golf. I remember when I first wanted golf clubs, I wanted to be a lefty golfer, because I played hockey and baseball that way, but my parents didn't want to buy "special" clubs. So I had to adapt, but it worked out for the most part. At one point I was a decent golfer, but my play time has

dwindled over the years as many of you can understand. Golf was always a large part of my life. We had a regular Sunday round with Grandpa, and whichever aunts/uncles/ cousins could make it. Every Labor Day, we have a family reunion and golf tournament, where, recently, we celebrated our 40th annual event!! Over the years, a few uncles have mostly dominated the event, but recently my cousins and I have finally started winning several for ourselves. Golf has been such a big part of our lives, my cousin is also a superintendent. Joe Rolstad is currently the superintendent at Fargo Country Club.

As for my immediate family, I have been married to my wife Michelle for almost four years. She is a Physician Assistant, working in orthopedic trauma. Our lives somewhat mirrored each other. She grew up in northern Minnesota. She moved to the east coast for several years, and then moved back to Minnesota around the same time as me. I was very fortunate to find her, as I hadn't yet met someone who actually wanted to honeymoon in Scotland like I did! We spent two weeks traveling around Scotland in May, where the weather was unseasonably perfect. We packed for gloomy, rainy days, but came home with pretty decent tans. We couldn't



The MGCSA membership extends Chris a warm welcome!

have asked for a better start to our marriage.

We are very fortunate to have two daughters, Evangeline, and Adelaide. Evie is almost 3 and Ada is almost 2. Yes, they are close together, only 14 months apart! We currently live in Robbinsdale, with intentions to move someday soon to expand our space for the kids. This winter, I bought our first set of toy golf clubs for the girls. They haven't really been used as golf clubs yet, but thankfully they haven't turned them into weapons yet either. I

look forward to encouraging proper technique someday soon.

Professionally, I have been a superintendent for the Minneapolis Park & Recreation Board for the past 5 years. Two years at Meadowbrook and three years previously at Theodore Wirth Golf Course. Before that, I was an assistant for three years with Brian Boll at North Oaks. Prior to that, I spent three years at Preakness Hills Country Club in New Jersey, working for John O'Keefe. This was a unique and great opportunity for me. At the time, John was



Chris and crew: wife Michelle and daughters, Evangeline (3) and Adelaide (2), enjoying a beautiful fall day.

on the GCSAA board, which allowed me to learn from different experiences and opportunities during my time in New Jersey. John became GCSAA president in 2015. I got my start at Manitou Ridge, spending, you guessed it, three years as an intern/staff member working for Greg Hubbard. I fully intend on setting a career record of considerably more than three years as your Executive Director!

More importantly, you're wondering how I ended up here? It all started during my first season on the golf course at Manitou. I quickly discovered a considerable disconnect between golfers, communities, and policy makers. It was clear that people didn't understand the reality of this profession, and what it takes to run a golf course. Even though I didn't fully understand, I decided then that I wanted to be the one to facilitate a dialogue and to be the connection between our profession and golfers, communities, and policy makers.











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This line of thinking led me to continue in my education. The original intention was to only do an associate's degree (AAS-Golf Facility Management, Century College), but I wanted to better position myself for this future goal. So, I chose to pursue a degree in recreation at the University of Minnesota (BS-Recreation Administration). I wanted to broaden my education into a related field and from the beginning my goal was to work in public golf. The public facing aspects of recreation seemed beneficial for any future

related leadership role.

As for becoming a superintendent, working for the park board was my goal. When I was in New Jersey, John let me come home for a month because I was a groomsman in three weddings on three consecutive weekends. (I think it demonstrates the mutual respect we had for each other and the value I provided him, that he let me come home for that long in October. I am always grateful for that). But the point is, while home, I went to a



Chris and Dr. Paul Koch, co-presenters at the November 2021 MGCSA Professional Turf Forum. Chris is an outstanding presenter.



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park board golf course future planning meeting. I sat at park board headquarters and listened to their future plans for the golf department, knowing this was somewhere I wanted to work someday. Everyone in the room was older than me by at least 20 years. Whenever there was an opportunity, I took advantage of it, and never stopped thinking about this as a career goal, even while working in New Jersey.

Now that I'm being given this opportunity as your Executive Director, I want to lead us on to further successes. That starts with one simple skill. It is essential that we

remain accountable to each other. As a member, did I participate every time I could? No, and there are times I regretted that. Over the last few years at the Park Board, I saw what the full value of this association can be. We needed support with our chemical issues, and the board and Jack stood up for us. That is our purpose, to support each other. The last few years have changed our day to day lives, but now it's time for all of us to re-engage and restore participation and support for all our events. If we are not participating or attending events, we are not holding ourselves accountable to each other. I do believe that



Chris at the 2022 Northern Green flanked by outgoing MGCSA President Scott Thayer (I) and incoming President Mike Sonnek.



we are stronger together, and the more members that are active and participating, the stronger we can be as an association.

A question for you to answer, what value do you get from this association? Also, you need to understand the value that you provide to us. It's important to know that your stories, ideas, and experiences are extremely valuable, and we need to share them with as many people as possible. We are stronger if we share our ideas, stories, and ambitions. We can each get more value

or ROI from our membership if we are actively engaged and participating. My goal is to support your needs, expose you to more opportunities and connections, and deliver a stronger, and better prepared membership. Please share your stories and ideas, attend education sessions, and participate with Hole Notes. Those who aren't comfortable with that idea, let's explore alternative ways to relay your message. I want to support your efforts to engage with other members, let's find a way that can work for you to share your stories.

Our advocacy efforts have been outstanding. We have previous Boards and Jack to thank for our current political standing. I have seen some of the difficulties that can be presented at local levels, particularly my experience with Minneapolis and chemical use. These issues are not going away anytime soon. We must continue to keep our seat at the table. I'm going to ask you all now for the first time: come March 2023,

we are hopefully back onsite at the capital, you all need to be there with us for Day on the Hill! It is imperative that we return strong and push for the assurances we need. We have some significant challenges ahead of us, but as we become more aware and strengthen together as an association, I know we can rise to those challenges, and find new and/or alternative pathways forward.



Chris is having a great time with fellow MGCSA members, David Schwartz (back left), Justin Bicek (back right) and Joe Rolstad, who happens to be Chris' cousin, during the 2018 Day On The Hill

Lastly, I understand the concern many of us feel regarding staffing. This obviously is a critical issue for at least the near term. We hope it's not long term, but the challenge could be significant. We need to be more aggressive in reaching out to potential employees and young people. The first challenge is simply telling young people that this is a career that exists. I was like most, even growing up with the game, I didn't know it was a career until after high school. Get them on your golf course, show them what we do, then we'll find ways to support the ones who are willing to engage. I was always excited when we had new employees with no experience. A blank canvas to mold and train, hopefully into our field. It was always enjoyable training and teaching, and when I could get someone

interested or engaged, it was always a hopeful moment for our future. There are opportunities out there for us. We have to aggressively, and deliberately, pursue them.

15 years ago, I set this job as a goal that could be achieved, taking opportunities that I thought would benefit me in accomplishing that objective. I still have the passion and drive in my career that keeps me striving towards my goals. Now it's time to set new professional goals, ones that can be defined within the aspirations of this association. I am incredibly grateful for this opportunity and enthusiastic to get started. We should be excited for the potential we have as an organization to support all of our membership groups.

As of March 1st, MGCSA Members can contact Chris at 651-324-8873 or chris@mgcsa.org. Please update your records and keep in touch with ideas and information.

2022 Northern Green Thank you 18 Hole Scorecard sponsors for your support!























































We Forgot How to *Promote* "Our" Industry

By: Matt Cavanaugh Rush Creek Golf Club



As a superintendent, as an assistant superintendent, what are you terrible at, what is the quality you need the biggest improvement on? Think about it for a second. Check the depths of your soul for the right answer. Never mind, I have seen your soul already and I'm going to tell you where you need the most improvement and I will be

blunt. You do not know how to effectively frame our profession of choice in a positive light to young individuals that may want to enter the superintendent profession.

Okay, the "you" was a little aggressive. I'll make it a collective industry "we". In fact, heaps of turfgrass management negativity have

been thrown at the young adults that fill our summer positions. We are the ones that should get them interested in the profession in the first place. It has been happening for years and our industry is now feeling the ramifications of our col-lective negativity.

Many of us coming through the ranks were also fed the same lines of negativity, and those of us reading this somehow persevered through poor mentor-ship to continue in the business and regurgitate the same garbage to our young seasonal employees.

Here are a few beautifully negative comments that have been said to current individuals in the turfgrass industry:

- At 16, an industry professional told me that I would be crazy to go into this business. "You have no life, and you make no money." The individual then looked at my boss at the time and said, "you are doing him a disservice by not discouraging him from the business."
- The superintendent I worked for said "You always have to be working. Even if you need to be

somewhere else, you always must show the membership that you are there. You can't ever leave."

- "You shouldn't go into the industry because you are too smart to have to work that hard and make so little."
- "You shouldn't go into the profession because you can't have work /life balance and your family will suffer." Gosh, I wonder why turfgrass enrollment numbers have declined over the past ten years. There are a multitude of reasons for not having enough individuals coming into the industry. Many of these reasons revolve around blaming others. Let's look at a few reasons the turfgrass industry likes to use:
- Kids do not want to work hard anymore.

This is the easiest thing to blame for young individuals avoiding the industry. So many assume that young adults are just not cut out for the early mornings and the physical nature of the profession. In my world I have not seen this. Most young adults, regardless of generation, need a model of work ethic and need time to develop the work ethic, regardless of profes-

sion. We need to stop, put down our own phones, and teach young adults instead of degrading them on social media (Picture 1). Our industry thinks we have the sole rights to working hard and that no one else in the world is cut out for it.

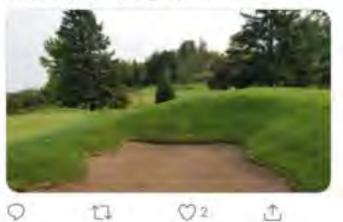
• Schools are not doing enough to attract students.

What is the number one driver of what a young adult will pick as a profession after high school? Money...what will their salary be after college. Now, some may say it is a passion for doing something. In my opinion that is second because someone may want to choose a major, but then come to the realization that "Hey, I can't make any money in that." Our industry is getting better, but the starting pay for individuals entering the work force is subpar and does not excite them, or their parents. As an industry, we need to do better. We need to pay more to the entry level positions and get the grassroots "pull through" of students to these two and four-year turfgrass programs.

• My budget is not big enough for higher pay.

Picture 1: Type of Twitter post that needs to stop.

Just spent 45 minutes moving sand in this trap. I'm sure the young guys will ruin it quickly. They have no clue what a trap should look like despite "reminding" them once a week. They don't see all the waves in the sand but immediately see when their phone goes off



o I get it, you have a budget, and you need to stretch it to make it work. Well, maybe you need to reevaluate things. From 2012 to 2016, the fertilizer budget at Rush Creek averaged \$43,000. The fertilizer budget for 2022 is \$16,000. Changes like this have certainly allowed for a little more wiggle room for the labor budget. Think about these inputs...can you justify them over a poorly compensated staff?

I am not naive enough to think that every young adult that comes to work at a golf course will aspire to enter the turfgrass industry. How-



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ever, as an industry we keep putting blame on other people for our labor issues. We keep thinking that people should come in with a passion, come in with an amazing work ethic and do it for subpar pay. Some may say, "That's what I had to do."

To me, all of this is bottom-up management instead of top-down management. We need to stop thinking that people are either made for this profession or they are not. Instead, superintendents and assistant superintendents in charge of young adults need to start showing an interest in these young adults and get them inspired. In short, be

the leaders that you are supposed to be and not just someone there to manage individuals to get a job done. I challenge you to think differently. Here are some ideas to help you provide a little spark to a young adult that did not even know a turfgrass career was an option:

1. Show an interest in the individual: It starts here. Get to know the employee a little beyond work. This opens the door for them to get to know you as well. It can soften the "Boss Armor" that can be intimidating to young adults, especially if it is their first job. All of this does not happen in one day, but a



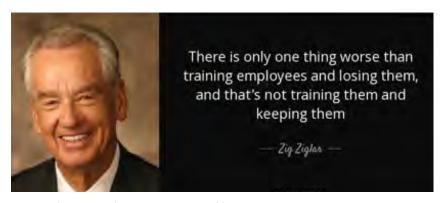


continual interest in an employee will show you care more about just them showing up for work.

2. Show a passion for what you do: Passion | 'paSHƏn| (noun): An intense desire or enthusiasm for something. You may have lost this along the way, and I recommend you get it back. If you do not show passion for what you are doing, then it will never transfer to someone else to spark interest in the industry. I continually communicate what we are doing to the young adults on the crew. It is often more detail than they want, but over time it shows that I care so much about

what I am doing that I am willing to share it with anyone. Young adults like to know the "what and why" of things. They don't just want to be told what to do. Showing passion gets young adults curious. I assume this is what goes on in their head... "Why does he like this stuff so much? Maybe I would like it too? At least he looks like he is having fun. My parents don't look like they have fun at their work."

3. **Be willing to put in the time to teach (train):** This can be combined with passion but will take more of a hands-on approach. Be willing to be the individual that shows a new



employee how to walk mow greens or cut cups. Spend a morning sitting on a fairway unit with a new employee and talk about the mistakes you have made doing this same job. There is no job more important than teaching and training the staff and this should never stop.

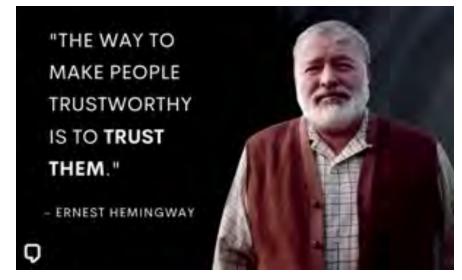
4. **Show trust:** "I don't trust anyone until they can prove to me that they can be trusted." What a pile of crap. This is the bottom-up way of managing. If we want young adults to enter this profession, we need to show trust in them first

(top-down management).
I am a firm believer of giving employees, especially new employees, jobs they never thought they would receive. For example, instead of putting someone in the bunkers on their first day, why not put them on a fairway mower day one. I

guarantee this will get them hooked early and they will be excited about what they are doing. Do not pigeonhole employees into jobs either. Continue to add new jobs to their plate and watch their interest for the profession

grow. "The way to make people trustworthy is to trust them" What a simple concept quoted by Ernest Hemingway that so many of us need to adopt.

5. Be positive and have fun: It is much more difficult to be positive and put on a smile day after day than it is to be negative and put on a frown. It is easier to doubt someone than it is to put trust in someone. It is easier to just put your head down, do the work, and not find ways to keep work fun and in-



teresting for your employees. However, if you want to get more young adults interested in the turfgrass industry you need to show that you are happy and having fun.

I recently had a conversation with a potential turfgrass intern for the 2022 season. This individual was looking to leave their home state and had talked with three other superintendents throughout the country before calling me. During our 45-minute conversation the

my way as I discussed the internship opportunity at Rush Creek. At the end of this conversation the individual said, "you have said the complete opposite to the other three superintendents I have talked to and have a completely different attitude toward the industry." This is truly one of the most flattering statements I have ever received. All I discussed were the items listed above and how I will go about providing them during the internship.



2022 Shop Tours

Thank you hosts Dave Erickson at Eagle Valley GC, Brandon Gauster at Oak Marsh GC and Mike Sonnek at Royal GC. Three very different destinations, each offering ideas and chance to network amongst peers.















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The other three superintendents laid out an internship plan that sounded more like grunt work and less like a teaching and being the learning experience it should be. Their discussions only fostered doubt and questions about the opportunity and the industry.

This article is meant to challenge the way we think as an industry. It challenges superintendents and assistants to flip the fact that you think young adults don't want to work hard and they cannot be trusted. This way of thinking puts all the weight on the employee and none of it on you. This way of thinking only allows you to continually blame others and use the popular industry phrase "I can't find employees who want to work anymore." Well, I see it differently, "I see leaders who do not want to lead anymore." Be the change that you and the industry need.





Would you like to host a golf and networking event at your course the summer of 2022? The MGCSA is seeking destinations for the Exposure Social Golf series next season. The format in-cludes: front nine golf mid-morning, lunch "at the turn", back nine early afternoon and then socializing. The Association has played at nine, eighteen and thirty-six hole facilities and want to experience your course too. If you want to host an Exposure event, please reach out to chris@mgcsa.org.

2021 Marshall GC Outreach and Open Turf Forum Thanks Host Superintendent Lance Tykwinski

MGCSA Winter Outreach 2021-2022
Information, Issues and Solutions
December 14, 2021
Marshall Golf Club, Host Lance Tykwinski
\$15 per person includes lunch



The agenda of the day will be: 8:00 Welcome/MGCSA update and advocacy

8:00 Welcome/MGCSA update and advocacy Maggie Reiter
8:30 UMN Update: Solutions to challenges that you can use NOW
9:30- 10:45 Frost Inc: Good, Better, Best and WORST spray tech solutions
11:00- 1:00 lunch/open turf forum: Water, wages and what's next?

Thank you Education Sponsor, Ken Rost



Thank you Lunch Sponsor, Matt Kuha

























Up-North Winter Outreach 2021-2022 Information, Issues and Solutions March 15, 2022

Fargo Country Club, Host Joe Rolstad \$15 per person includes lunch

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The agenda of the day will be:

8:00 Welcome/MGCSA update and advocacy

8:30 UMN Update: Solutions to challenges that you can use NOW

9:30- 10:45 Frost Inc: Good, Better, Best and WORST spray tech solutions

11:00- 1:00 lunch/open turf forum: Water, wages and what's next?

Adjourn at 1:00

Thank you Education Presenters: UMN Maggie Reiter and Ken Rost





Thank you Lunch Sponsor, Matt Kuha





Thank you Event Supporters:













Local Golf Course Architect Norby reflects on Fox Hills project after first season of play

By Alice Chambers



Hole 15 expresses the unique design created by golf course architect Kevin Norby. All photos by Peter Wong.

Golf course architect Kevin Norby has reflected on the development of his new Fox Hills layout in Watford City, USA, following the completion of its opening season.

Norby began work on this project in 2008, when the club hired him to explore the possibility of extending its existing nine, which he described as "an interesting piece of property but not a course you'd go out of your way to play", to 18.



Wetlands embrace the thirteenth hole at Fox Hills.

Initial concerns revolved around the question of whether there would be sufficient demand. "In 2008 we weren't really sure the area could support another 18-hole course," said Norby. By 2013, and with evidence of an increase in 'destination' golfers, the club decided to go ahead.

"We wanted to create a unique golf course that would attract golfers from throughout the region," said Norby. "This will be a great course for local residents but will also attract golfers who journey to western North Dakota to play courses like Bully Pulpit and the Links of North Dakota."





Hole 12 shows wooden bulkhead-faced bunkers which allowed the design of deep bunkers to limit sand loss due to the windy conditions.

The project started as a nine-hole addition to the existing course but by 2014 nearly 400 acres had become available for an entirely new golf course and associated development. "The added land allowed us to work with the natural features and existing topography to create some really stunning golf holes," said Norby.

Construction was completed by Nebraska-based golf course contractor Landscapes Unlimited in 2019, and limited play began in 2020. A grand opening followed in April 2021. The main goal at Fox Hills was "to build a golf course that would be fun for beginners and yet challenging for low handicap golfers," said Norby.

The layout, now closed for winter, is set on 200 acres of rolling prairie and is part of a residential development that was master planned by Norby. It measures 6,980 yards from the back tees and 4,793 yards from the forward tees.

The front nine plays along the western bank of a creek that bisects the property and the back nine plays along the east side of the creek and along the higher hills. The driving range and five of the eighteen holes play on property previously occupied by the original nine-hole golf course.

One distinctive aspect of the course is the wooden bulkhead-faced bunkers. "Wind is a big factor out here in western North Dakota," said Norby. "The wood bulkhead bunker faces allowed me to make the bunkers deep enough to minimise sand loss and at the same time ensure that the bunkers are visible".

"The par five eighteen hole exemplifies the strategic nature of this course," says Norby. "The hole plays just 532 yards but six bunkers demand accuracy and restraint. A well-struck tee shot which avoids the first three fairway bunkers will leave a chance to reach the green in two. The green is large, but the slope of the green requires a draw or an approach from the right side of the fairway.



Hole three blends the aspects of fun and challenge for all golfer abilities. The MGCSA membership thanks GCA and Alice Chambers for this reprint.



MGCSA needs YOUR support!!!

The following committees are looking for help during the upcoming year:

Conference, Events and Education Research and UMN Support Advocacy and Government Affairs

Please consider becoming active and helping your professional association by providing time and ideas.

Reach out to Chris@mgcsa.org

March 22nd MGCSA Assistants*** Pro Forum and Social Bowling Event



PINZ Bowling Center Woodbury, MN

7:30 Registration treats provided by: ECGROW

8:00 Welcome/MGCSA update and advocacy by:



Extension Turfgrass Science

8:30 UMN Update: Solutions to challenges that you can use NOW

9:30- 10:45 Frost Inc: Good, Better, Best and WORST spray tech solutions



11:00 - 12:30: To be determined, leadership management presentation.

12:30- 2:30 lunch/open social bowling sponsored by:



Just \$30 per person! Register HERE

***Irrigation/spray techs, EMs and staff welcome

Turfgrass Research Highlights

2021 Turfgrass Field Day

In collaboration with Minnesota Golf Course Superintendents Association

Our Turfgrass Field Day for golf clientele took place on September 9 at the TROE Center in St. Paul. We hosted 28 attendees and spent 2 hours sharing research projects about managing turfgrass during drought, mycorrhizae and biostimulants, greens and fairway cultivar trials, shade stress, minimal-to-no mow fine fescue, and winter injury detection. Post-event survey respondents said the event was excellent, organized, and informative. Several said they would change their management practices around no-mow fine fescues and study NTEP cultivar evaluation data closely.



Turfgrass Field Day for golf at the TROE Center in St. Paul.

Improving winter stress tolerance and recovery

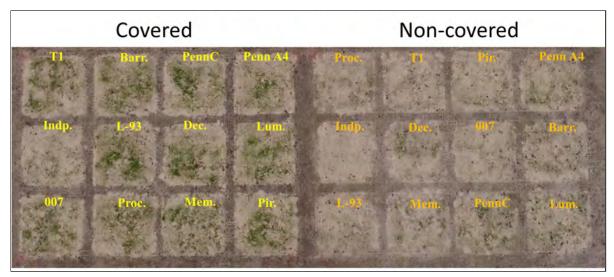
Re-establishment of putting greens following winterkill

Funding: United States Golf Association

Winter damage causes loss of putting green surfaces, resulting in costly re-establishment, delays in course openings, lost revenue, and unhappy golfers. This project examines to what extent permeable

covers improved the establishment of creeping bentgrass cultivars. Bentgrasses were seeded on April 16th on native soil and were either covered with an Evergreen 'Radiant' permeable cover or were not covered. The covers were kept on through the first 14 days. In the next 7 days, covers were removed during 2 of the days, and the covers were completely removed after 25 days.

Covers led to an increase in soil temperature compared to uncovered areas. The covers significantly decreased the number of days until germination was noted, 12.8 days compared to 14.8 days. 'Independence' and 'Penn A4' had the slowest germination of all the cultivars in either covered or uncovered plots. The covers sped up the time to both 50% and 80% turfgrass cover by ~6 and ~7 days, respectively.



Plots that were either covered or not covered, 21 days after being seeded in St. Paul.

WinterTurf: A holistic approach to understanding the mechanisms and mitigating the effects of winter stress on turfgrasses in northern climates

Funding: Minnesota Golf Course Superintendents Association, United States Golf Association, Michigan Turf Foundation, United States Department of Agriculture

Golf course superintendents in the northern part of the US are faced with the problem of winter damage risk every year, and to date, few viable solutions have been developed by the turfgrass research community. This problem requires a large-scale, interdisciplinary approach. To that end, we have assembled a team of collaborators from across several institutions, representing a wide array of expertise, who desire to work together toward a common goal of providing tools that golf course superintendents can use to reduce winter stress injury.

The MGCSA members appreciate the excellent support provided by the University of Minnesota Turfgrass Research Team. Thank You UMN!

We have taken important first steps in this undertaking: the development and deployment of environmental sensor nodes on golf courses that will allow researchers to learn more about how turfgrasses die during winter. This information can drive a series of future research projects that can have a great impact on the golf course industry. Ground sensors will provide detailed measurements of what is happening just above and below the soil surface on golf greens. Building on pilot work funded by MGCSA from the 2019-2020 and 2020-2021 winters, we placed in-situ sensing nodes on 35 golf greens in Minnesota and other cold climates in fall 2021. The sensing nodes measure important environmental parameters including soil moisture and temperature at 3 depths (1.25 cm, 7.5 cm, 15 cm), air temperature, barometric pressure, relative humidity, O2, and CO2 gas levels just below the soil surface; and photosynthetically active radiation. To ensure data collection system robustness, data is logged both locally to nonvolatile memory on the device and stored in real-time in the cloud. Data is accessible through an easy-to-use web portal. During November 2021, golf greens identified for sensor nodes were assessed by the host superintendent for turf health and species composition; the same assessment will be done each spring so that before and after winter comparisons can be made. In addition, each superintendent has agreed to collect snow depth information on each quadrant of the green, along with ice and water observations. Data from sensors will be stored in an integrated database along with other information obtained from golf course superintendent observations and measurements, drone flights, and satellite imagery. For almost 150 sites without sensors, golf course superintendents took before-winter and will take after-winter images to document changes due to winter stress. Using recently awarded funding from the USDA Specialty Crop Research Initiative (\$8 million total), these data will be collected for the next four years and used for modeling, spatial data mining, and machine learning by collaborators at the University of Minnesota, leading to new knowledge about how turfgrasses are affected by winter stresses.

Integrating new technology and products

Precision irrigation technology scaled up through on-course demonstration

Funding: United States Golf Association

A number of technologies are available to help superintendents reduce water use, but many have not been scaled up across a golf course. The purpose of this research is to demonstrate that adoption of soil moisture sensor and mapping technologies can provide superintendents with actionable information that conserves resources. We have completed a second summer of data collection at Edina Country Club in Edina, where we are testing 3 different irrigation scheduling approaches: 1) precision irrigation scheduling with soil moisture sensors; 2) ET-based irrigation scheduling at 60% ET, 3 times per week; and 3) traditional scheduling as determined by the superintendent. Results indicate that the ET-based treatment used more water than the superintendent's decision-making or soil moisture sensors. In fact, the soil moisture sensor approach used the least water and saved 174,000 to 537,000 gallons of water per month compared to the ET-based approach.



Soil moisture mapped across 9 fairways at Edina Country Club.

Thistle control in fine fescue naturalized areas

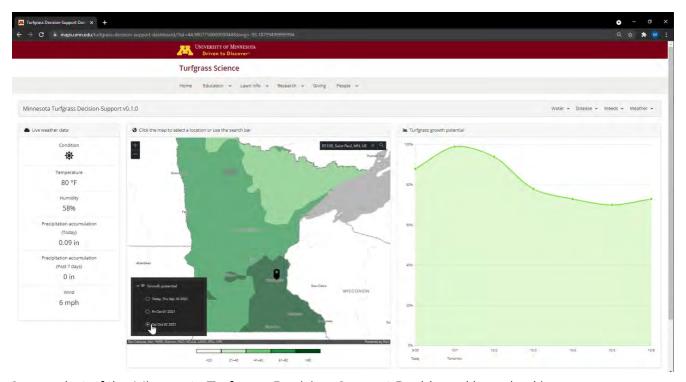
Funding: Corteva

One of the most challenging weeds mentioned in a survey of Minnesota golf course superintendents was thistles in naturalized areas. To address this need, we conducted a trial to measure fine fescue safety of new herbicides designed to control broadleaf weeds like thistles: NativeKlean (2,4-D + aminopyralid) and GameOn (2,4-D + fluroxypyr + halauxifen-methyl). This experiment was conducted on an unmowed fine fescue area at Town and Country Club in St. Paul. Plots were sprayed in May 2021 and injury to fine fescue was measured over 2 months. Slight phytotoxicity (10-15%) appeared in plots treated at 2 times the label rates, but this level of injury is negligible in a naturalized area and certainly not visible to a golfer. NativeKlean and GameOn are effective options for thistle control and are safe on fine fescues. Consider adding these newer herbicides to the toolbox with established options like 2,4-D, dicamba, triclopyr, and clopyralid.

Establishment of a Minnesota turfgrass decision-making dashboard

Funding: University of Minnesota Extension, Minnesota Golf Course Superintendents Association, Minnesota Turf and Grounds Foundation

Golf course superintendents use biophysical models to manage turfgrass, such as weather forecasts, disease risk models, and water use estimates. Although high-resource facilities use commercial products like irrigation software and on-site weather stations, most golf courses in Minnesota do not have access to this level of technology. Online dashboards are used to help people make data-informed decisions and optimize use of resources. We built a Minnesota turfgrass decision-support dashboard that gathers live weather and agronomic data from multiple sources, analyzes and aggregates data, and presents the data in a visual output. The dashboard includes different models relevant to golf course turfgrass, like cool-season turfgrass growth potential, Smith-Kerns dollar spot model, a Pythium blight model, crabgrass germination and herbicide timing models, as well as weather variables like temperature and precipitation. The dashboard can be accessed at maps.umn.edu/turfgrass-decision-support-dashboard and through turf.umn.edu.



Screenshot of the Minnesota Turfgrass Decision-Support Dashboard launched in 2021.

Be sure to keep up to date by following the UMN Turfgrass Blog

Cultivar evaluation and low-input turfgrass

NTEP and SCANGREEN cultivar trials

We continue to evaluate turfgrass cultivars of all cool-season species for use on golf courses in Minnesota. Ongoing National Turfgrass Evaluation Program (NTEP) trials include the 2020 Bentgrass Greens Trial and the 2020 Fine Fescue Fairway Trial. A two-year low-input cultivar evaluation trial, as part of a collaboration with scientists in Norway, was completed in fall 2021. The trial, known as SCANGREEN, includes a number of cultivars representing several cool-season turfgrass species at multiple locations: Landvik, Norway; Apelsvoll research station, Norway; and Reykjavík, Iceland. Species included in the trial were creeping bentgrass, colonial bentgrass, velvet bentgrass, rough bluegrass, Kentucky bluegrass, perennial ryegrass, Chewings fescue, and slender creeping red fescue. Turfgrasses were maintained at mowing heights and fertilization regimes appropriate for each species when managed as a green, and the entire trial experienced traffic stress throughout the summer of both 2020 and 2021. In Minnesota, the fine fescue entries generally did well, but began to decline in quality during summer 2021 due to summer stress combined with traffic stress. Creeping bentgrass cultivars showed high levels of snow mold susceptibility, which was not surprising given that the plot area was not treated with any pesticides; in this low-input setting, many creeping bentgrass plots showed the effects of snow mold damage far into the summer. As golf course superintendents look toward a future of reduced inputs, data from trials such as SCANGREEN will be an important resource.

Improving unmown fine fescue areas

Funding: United States Golf Association

No-mow fine fescue stands can become thick and weedy, which reduces playability and requires labor for mowing and weed control. The objective of this research is to determine the impact of mowing timing (spring, fall, or spring + fall) for weed suppression, golf ball visibility, and aesthetics. Experiments were conducted on hard fescue at the TROE Center in St. Paul and at Rush Creek Golf Club in Maple Grove. Sites had differences in weed species. In St. Paul, white clover and black medic weeds were most severe in fall only and spring + fall mowing treatments. On the other hand, in Maple Grove, thistles were more severe in plots mowed only in spring. Annual mowing is important because plots that were unmowed suffered from dead areas and winter injury, but timing of mowing may impact weed populations.

For more information about these and other ongoing projects in the turfgrass program, please visit turf.umn.edu or follow us on Twitter at @UMNturf

In Bounds

by Jack MacKenzie, CGCS

Following 49 years of dedicated service to our fine industry, there isn't anything I can say other than, "Thank you for your support".

From the time I started as a rookie on the grounds crew at the White Bear Yacht Club under the tutelage of my friendtor, John Steiner CGCS, through my tenure as your Executive Director, I can honestly say that I have no regrets regarding the career choices I have made. Curious though, very little of that enjoyment was derived from the actual game itself. Rather, upon learning that golf course management was a vocation in 1978, I simply relished the idea of property management and all the associated variables. The opportunity to work somewhat autonomously also had romance and set me up nicely for the position I have held the last ten years.

For almost five decades I have watched our industry of profession-

als grow from glorified "sod-busters" to highly valued fine turf managers. Institutions were built



upon our growing scientific knowledge base and turf management skills, although sadly, many have closed their doors. However, I can say with pride that I lived through the golden growth days of golf course superintendency.

It was challenging, yet fun to work with a diverse group of people with even more diverse back grounds.

Seniors, juniors, guys, gals, millennials, boomers, x-ers, Hispanic, Czechoslovakian and even Wisconsinites, it has been so very rewarding to get to know such an assorted gang of individuals.

Quirky, intelligent, sophomoric, sensitive, happy, depressed, hard-working, and some not-so-

much, have added to my basket of memories. Of course, my best seasonal staff were my two kids Tyler and Madeline! Work always carried over into "truck" conversations to and from North Oaks Golf Club.

Luck was with me as I was blessed with a few great assistants during my years as golf course superintendent; Paul Eckholm, Rich Anderson, Dan Swenson and Justin Bicek, and one incredible mechanic, Bob Wappula. Through seemingly continuous renovation, this gang kept me on track and helped me to be a better superintendent. Thanks guys.

I would be remiss if I didn't share kudos to the amazing MGCSA Boards, Officers, affiliates, class members, and in particular, Presidents who have allowed me to pursue, well beyond member management, ideas and initiatives that have endorsed the industry of professional golf course turf management since 2012. Too many to name individually, I thank each of

you for the direction and freedom to implement plans that promoted our industry.

And, a plug for the University of Minnesota, the Turfgrass, Research, Outreach and Education Center, Dr. Brian Horgan, Dr. Eric Watkins and especially Dr. Don White for their industry endorsement.

One could say that life's journey is shaped by the people we meet along the way. True to a point, but I will also hold in my heart magnificent sunrises, tremendous summer storms and deep winter snows. Rainbows, bluebirds, coyotes, and ducklings. My course sidekicks Jessie BoBo, Bailey, Nugget, Tyson and Sadie. The smell of spring, taste of drought, chill of January. Zebra mussels, disease pressure, bad glue joints, dirty power, loud bands, curious politics and oh so many more challenges. Every day was an opportunity ready for action.

Who could have wished for more?