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THE HOT LIST

20-plus must-see products and
must-do events at the 2025 GCSAA
Conference and Trade Show

PLUS

2024 Green Start Academy

Syngenta Business Institute recap

Golf course ponds and amphibians

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The Hot List

Twenty-plus must-see products and must-do events at the 2025 GCSAA Conference and Trade Show



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"The '22 GCSAA Conference had the bad luck of being in California, where restrictions were still tight at the time. Oh, what we all would have done for a GCSAA conference and show in Orlando that year."

SETH JONES, *Editor-in-Chief & Associate Publisher*

Sometimes, it's more fun to forget

Me and some friends were in the car, heading to watch the slate of afternoon NFL games, when one of the group reflected on this same time last year. His wife reminded him he had to miss some things, including our watch party because, at the time, he was laid up with COVID.

He argued that wasn't the case; he'd only had COVID once, and it was much earlier in the pandemic. But she reminded him of the specific circumstances, to which he replied: *Oh, yeah, sorry Honey ... I forgot.*

We all chuckled at the story, and then I shared my theory: When it comes to bad things or even semi-bad things (there's a better word than semi-bad, but you know what I mean) that we want to move on from, we move on. We put them behind us and forget the details. For example, I told the guys I barely remember recovering from a minor surgery a few years ago. It was a big deal at the time, but now I only recall bits and pieces of it.

I feel the same way about the 2022 GCSAA Conference and Trade Show that took place in San Diego. Remember that one? Maybe only bits and pieces. Or did you miss that one? It was, after all, poorly attended.

That's because that show was the first one back after the pandemic (remember the virtual GCSAA Conference the year before? Me neither). The '22 GCSAA conference had the bad luck of being in California, where restrictions were still tight at the time. Oh, what we all would have done for a GCSAA conference and show in Orlando that year. If I recall correctly, you had to present either a vaccination card or proof of a negative test before they'd even

let you enter the San Diego Convention Center. The result? Social distancing wasn't something you had to practice; it was just a fact of life.

Now it's 2025, and we're back to San Diego. Ron Burgundy from *Anchorman: The Legend of Ron Burgundy* might say, San Diego? No one knows what that means anymore. But I think I do.

It means we're at the start of a new year, a fresh start. The election, whether you liked or loathed the result, is behind us, and we can move on. The 2025 golf season is in front of us. Forty-five million golfers are clamoring to get back out on the links and make this the year that they really shave some strokes off their games.

In this issue, we preview what is sure to be a much-improved San Diego experience from the 2022 edition. The times have changed, for the better, and I'm celebrating by spotlighting my must-see booths and must-attend events in this month's cover story. We also share a map of the trade show floor to connect the dots, as well as a *Golfdom*-partner-driven feature, "Hot List," where our advertisers share with you why you have to stop by and see them at the GCSAA Conference and Trade Show, whether they're a company you've known for years or a new kid on the block.

There's also more in this issue beyond the coverage of the conference. Michelle Boone, Ph.D., and Holly Puglis, Ph.D., write on the topic of golf courses and how they interact with amphibians; Managing Editor Rob DiFranco recaps his busy December at Green Start Academy and Syngenta Business Institute in back-to-back weeks; and my 19th Hole Q&A is with cancer survivor Rob Dorsch, CGCS at Richter Park GC in Danbury, Conn.

As I write this, I've just returned from the 2024 *Golfdom* Summit in Orlando. It was one for the record books, for multiple reasons. But I'm saving that content and how you can attend in 2025 for next month's issue.

Happy New Year, and I hope to see you in San Diego!

Email Jones at:
sjones@northcoastmedia.net

Starter

NEWS, NOTES AND QUOTES



// BIG BUSINESS



Syngenta Business Institute attendees left the four-day event in Winston-Salem, N.C., with a certificate and dozens of new connections with fellow superintendents.

SYNGENTA BUSINESS INSTITUTE GIVES SUPERS A LESSON IN LEADERSHIP

BY ROB DIFRANCO // Managing Editor

➔ Syngenta, in partnership with Wake Forest University, hosted its 16th annual Syngenta Business Institute for golf course superintendents from across the country last week in Winston-Salem, N.C., to rave reviews.

A favorite of former attendees — as evidenced by the still active communities you can find on X, formerly Twitter (try searching #SBI23) — a new batch of 23 superintendents took in three days of networking and learning at the scenic Graylyn Estate just minutes from the Wake Forest campus.

Balance vs. balancing

Julie Wayne, Ph.D., professor, and David C. Darnell, presidential chair in principled leadership, kicked off day

one of SBI, leading superintendents through ways they can achieve a better work/life balance.

Throughout the four-hour class, supers shared how they struggle with being ‘workaholics’ and feeling guilty about wasting time when they’re not actively working.

Wayne stressed that there’s no such thing as balance. Instead, there is the constant act of balancing.

In the second half of the day, Amy Wallis, Ph.D., professor of practice in organizational behavior, led superintendents through one of the most memorable sessions of the week on leading across cultures and generations.

Superintendents played the well-liked card game and shared stories about how

Continued on page 7

// MONARCHS IN THE ROUGH

AUDUBON GETS GRANT FOR BUTTERFLY PROGRAM

Audubon International has received a \$25,000 grant from The FairWays Foundation to help sustain and grow its Monarchs In The Rough program.

This program sees golf courses establish milkweed habitats where the endangered butterflies can lay eggs during their seasonal migration periods. Grant funds will be used to provide regionally appropriate milkweed seeds and program signs to participating courses.

“We are delighted and honored to receive a grant from FairWays Foundation,” said Christine Kane, Audubon International CEO. “Monarchs In The Rough is one of our most popular and vital ongoing conservation initiatives, with participants within and outside the United States. This grant will go a long way in helping golf courses do their part to bolster Monarch populations along their Western Hemisphere migration corridors.”

// SWITCHING SIDES

BERNHARD AND CO. ADDS SUPER AS SALES MANAGER

Bernhard and Co. recently selected Brent Holmes as its new territory sales manager for the Southeast United States.



Brent Holmes

Originally from Georgia, Holmes has more than 30 years of experience in the golf industry. Beginning his golf course maintenance career at 14, he earned a degree in golf course operations from Lake City Community College in 1992.

Since then, Holmes has held multiple positions, including assistant superintendent on the Robert Trent Golf Trail, golf course superintendent at Emirates Golf Club and project manager for Paragon Golf Construction.

“Brent’s deep industry experience and proven track record make him an outstanding addition to our team,” said Steven Nixon, managing director for Bernhard and Co. “His leadership qualities will enhance our ability to deliver reliable, high-quality turf health solutions and care to our distributors and customers.”

PHOTO BY: WELGLAD / ISTOCK-GETTY IMAGES PLUS / GETTY IMAGES (GOLFBALL); LINDSAY RUSZAK

// BUCKET LIST ITEM

Green Start Academy returns to Pinehurst

BY ROB DiFRANCO // Managing Editor

➔ In 2020, the United States Golf Association named Pinehurst Resort as its first “anchor site” for the U.S. Open. That same year, Pinehurst unofficially became the anchor site for one of the industry’s most beloved events, Green Start Academy.

Bob Farren, CGCS, director of golf course maintenance at Pinehurst, told the 50 assistant superintendents in a welcome reception at the resort’s maintenance shop that the event is a passion of his. He also encouraged attendees to be present in the moment during the week.

“I insist that you’re intentional with your time,” he said. “Thousands of people come (to Pinehurst) as a bucket list item. Treat this as a stepping stone. Be intentional about meeting people and what that might mean to you in the future.”

In addition to presentations on diversity and inclusion in the industry, Bubba Wright, former superintendent at Pebble Beach and current director of agronomy at Big Cedar Lodge, gave assistants an inside look at what it’s like to host a professional tournament.

“Having an impact on the next generation’s lives and careers certainly means a lot to me,” he said. “I went through this program 12 years ago, so to come back and be able to give back and see how far the program has come after what it did for me personally is huge.”

Wright led a group of assistants as one of six mentors — all of which were former Green Start attendees.

The 2025 iteration of Green Start Academy will be the event’s 20th anniversary. Applications will open for interested superintendents in the spring of 2025.



Alex Tolbert (left), presents a gavel to Pete Gerdon, recognizing his service to the Carolinas GCSA.

// MYRTLE BEACH PARTY

MORE THAN 2K ATTEND CAROLINAS GCSA SHOW

Close to 2,200 people attended the Carolinas Golf Course Superintendents Association (GCSA) Conference and Trade Show on Nov. 18-20. The three-day event in Myrtle Beach, S.C., took place less than two months after Hurricane Helene devastated parts of the region.

“Some of the regular faces were missing this year because they had more important things to take care of,” Tim Kreger, executive director of the Carolinas GCSA, said. “But they were in our hearts, prayers and conversations all week.”

Helene damaged hundreds of golf courses in North and South Carolina in late September but nowhere more severely than in the mountains of western North Carolina. Some courses will not reopen until well into next year, and there are concerns that some might not make it back at all.

// KING OF THE HILL

GOURLAY WINS ENVIRONMENTAL STEWARDSHIP AWARD

The Golf Course Superintendents Association of America (GCSAA) named Matt Gourlay, CGCS, MG, AGS, superintendent at Hillcrest Country Club in Boise, Idaho, as the recipient of the 2025 President’s Award for Environmental Stewardship.

Gourlay, a 22-year GCSAA member, uses an approach to environmental stewardship that focuses on reduced inputs on the golf course while still providing high-quality playing surfaces. His Natural Resource Management Plan used best management practices regarding pests, environmental planning, water conservation, water quality, waste and energy usage management.



John Deere, Envu and Rain Bird have big plans for the 2025 Green Start Academy, which will be the event’s 20th anniversary.

PHOTOS BY: GOLFDOM STAFF; CAROLINAS GCSA

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Ryan Fitzpatrick, NFL quarterback

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Yes, we believe in FitzMagic.

A seventh-round pick in 2005 from Harvard, Fitzpatrick started for nine different NFL teams, the most ever by a quarterback. He threw touchdowns for eight different teams, also a record. Fitzpatrick played his final season for the Washington Football Team in 2021. He finished his career with 34,990 passing yards, 223 touchdowns and 169 interceptions.

When he's not out on the golf course, Fitzpatrick now enjoys working as an analyst on Amazon's *Thursday Night Football*.

— Seth Jones // Editor-in-Chief

"I love the fellowship (in golf). I love just getting out on the course for

four hours with the guys and gals that you're playing with and having a relaxing time. It's fun. The competitive nature of an athlete, after you're retired and done, it's fun to get out there and compete a little bit.

"You always appreciate the work that goes into maintaining a golf course, and sometimes it goes unnoticed. It's kind of a thankless job. A course like this right now is in such beautiful shape; those guys put a lot of work into it. And I always feel bad because I take huge divots. I feel really bad — I'm trying not to take as big of divots as I usually do."

"You always appreciate the work that goes into maintaining a golf course, and sometimes it goes unnoticed. It's a thankless job."

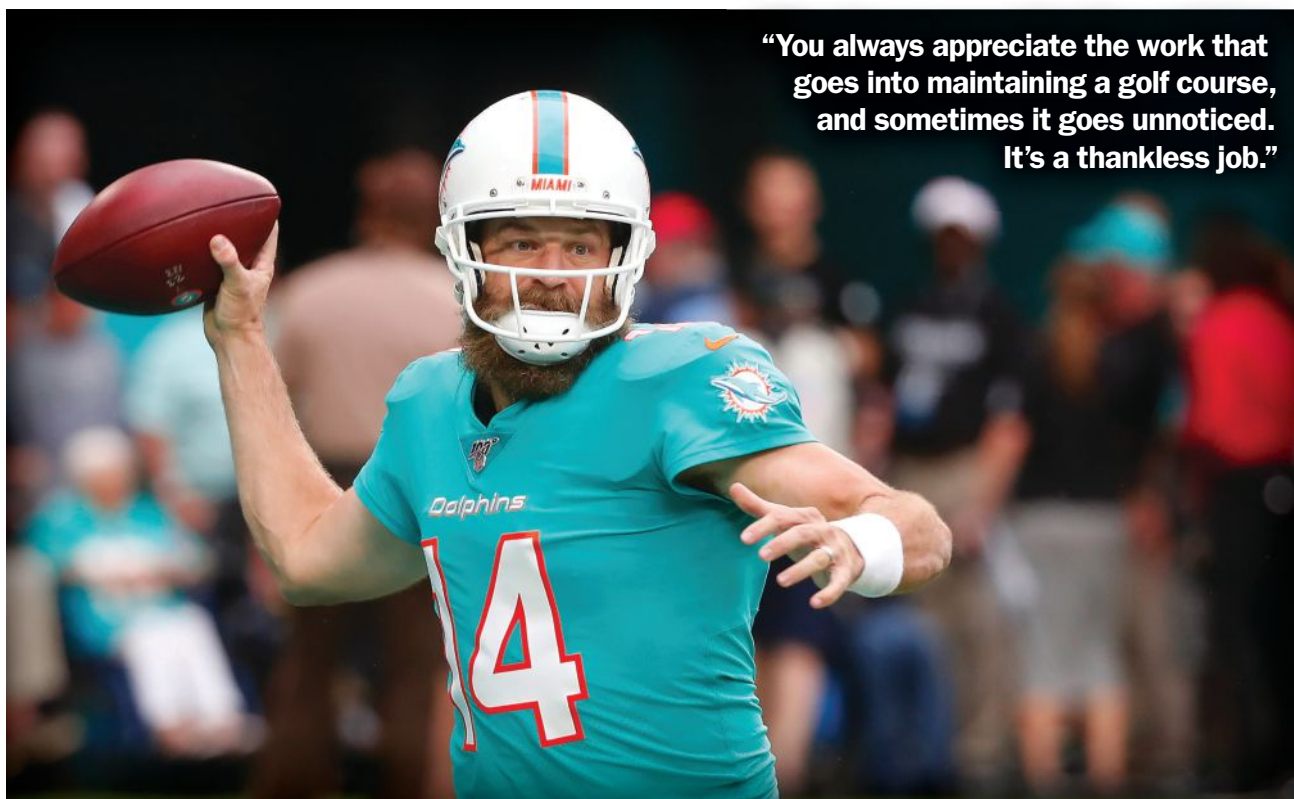


PHOTO BY: ASSOCIATED PRESS / BRYNN ANDERSON

// BIG BUSINESS

Continued from page 4

they manage and lead teams with non-native English speakers.

Superintendents closed out the final night of SBI with roundtable discussions on topics including recruiting and retaining employees and successfully communicating with their teams. Wallis, who facilitated the recruiting roundtable, was pleasantly surprised to hear that participants have started having more luck hiring employees.

"COVID threw out the old playbook. We have to write the new one," said Noah Tubbs, golf course superintendent at Glens Falls Country Club in Queensbury, N.Y.

Several superintendents shared success stories of hiring high school and college students, while others offered up strategies for finding and developing

potential assistants.

Managing phone usage by employees on the course was a hot topic during the communication roundtable. Supers discussed the ups and downs of allowing their younger employees to have phones with them throughout the day.

While some acknowledged that cell phones can be a distraction, others pointed out that it helps them stay in better contact during the day.

"They're always going to answer a text," one superintendent said.

What? So what? Now what?

At the end of her day two and day three sessions, Sherry Moss, Ph.D., professor of organizational studies; Benson Pruitt, professor in business and associate dean of MBA programs, asked attendees to ask

themselves three questions: What? So what? Now what?

Superintendents had a wide variety of answers, including the ways they planned on implementing Moss' suggestions into their day-to-day operations.

One thing that almost every attendee answered to the 'now what?' question, whether it was to each other on their shuttle to the Greensboro airport or on X in the days after the event, was sharing how great their experience was and encouraging others to apply for next year.

"Reaffirming your beliefs, trying on a different lens, and/or meeting some great (superintendent) minds, it's an experience you can't afford to skip out on," said Aaron Barnett, CGCS, director of agronomy at Indian Creek (Fla.) Country Club, on X.

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Golfdom Gallery



1 Two of our favorite Clevelanders
That's 2023 NFL Defensive Player of the Year Myles Garrett of the Cleveland Browns with our own Jake "Goody" Goodman, western regional sales manager for *Golfdom*.



2 Rocky Mountain men Enjoying their time at the Rocky Mountain GCSA Annual Meeting in Denver are Jack Robbins, superintendent, Pinehurst CC, Denver; Kyle Merritt, superintendent, Eaton (Colo.) CC and Eric Gustafson, staff, Rocky Mountain GCSA.



3 B-Rob, Stumpy and T-Bone walk into a conference... Reppin' at the Rocky Mountain are Brian Robbins, SiteOne Landscape Supply; Jeremiah Stumpf, superintendent, Broken Tee GC, Lakewood, Colo., and Tim "T-Bone" Davis, superintendent, Legacy Ridge GC, Denver.



4 A rooftop bar in Charlotte That's exactly where we'd expect to find this crew! (Left to right) Bill Roddy, *Golfdom*; Bobby Kerr, Ph.D., Quali-Pro; Kevin Stoltman, *Golfdom*; Ryan Karapas, Quali-Pro; Chris Butcher, Quali-Pro; Craig MacGregor, *Golfdom*; Allan Fulcher, Quali-Pro; Cal Hill, Quali-Pro; Seth Jones and Scott Hollister, *Golfdom*, enjoy the scenic view.

5 Father and sons and a couple cornhole ringers Brothers Jack and Dan Robbins (left, Dan is superintendent at Ptarmigan CC in Fort Collins, Colo.) came in second place in the annual RMGCSA cornhole tournament, falling to the recurring champions — their dad, Scott Robbins (left), CGCS, Ptarmigan CC, and Dwight Staats, Highland Hills GC, Greeley, Colo. Beware: Scott and Dwight are *ringers*!



PHOTOS BY: GOLFDOM STAFF



6 Mean green machine (from left) Gabriel Unger, Sebonack GC; Daniel Venditti, TPC Potomac; Jon Urbanski, Wilmington CC; Collin Domblesky, Aronimink GC; Austin Brown, Fall Line GC; Patrick McDonald, Union League Liberty Hill; and Thomas DeProspero, Seminole Legacy GC, were the winning team of the 2024 Green Start Academy competition.



7 SBI Dream Team (from left) Kerry Shrouts; Sherry Moss, Ph.D.; Julie Wayne, Ph.D., professor, Wake Forest University; Stephanie Schwenke, turf market manager, and Mark LaFleur, communications lead, Syngenta; and Amy Wallis, Ph.D., Wake Forest, pose for a picture on the final night of the 2024 Syngenta Business Institute.



8 Herb's new home We visited the locker of *Golfdom* founder Herb Graffis in the World Golf Hall of Fame in its new home at Pinehurst Resort. If you didn't get to visit the Hall while it was in Florida, we highly recommend checking it out. Now, we've just got to find out how to get an issue of *Golfdom* in Herb's locker!



9 Road warriors Bubba Wright (left), director of agronomy at Big Cedar Lodge in Ridgedale, Mo., and *Golfdom* Managing Editor Rob DiFranco both pulled double duty over the first two weeks of December. Wright was an attendee at the Syngenta Business Institute and, a week later, served as a mentor at Green Start Academy. Read what Wright had to say about Green Start on page 5.

The Golfdom FILES

FROM THE ARCHIVE

Nearly 60 years after this article ran in the March 1965 issue of *Golfdom*, golf course construction — both new courses and upgrades to existing courses — is on an upward swing, according to the National Golf Foundation. Read what an architect from the Northeast had to say about what to know before you build a new course. Does any of this hold true more than half a century later? To read the full story, visit Golfdom.com.

Before you build that golf course ...

BY GEOFFREY S. CORNISH, GOLF COURSE ARCHITECT, AMHERST, MASS.

All over North America, land is being cleared and contoured for golf courses. Even though construction has experienced an amazing surge, there are many more golfers per course in many sections of the U.S. than a decade ago. About 350,000 persons took up the game in 1963. Including both nine- and 18-hole layouts, there is now only one golf course for every 900 or so golfers. About half of these courses are member owned country clubs catering to relatively few players.

In the June 1963 issue of *Golfdom*, I had the opportunity to discuss eight points to be considered when a course is built with a profit motive. It was noted that if it is well-designed, well-built and well-kept, a course can gross in excess of \$100,000 annually from green fees alone, even in areas where the playing season is 30 weeks or slightly less.

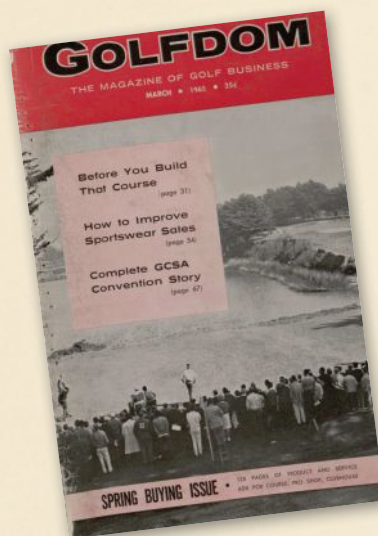
Because of this article, numerous inquiries have been made from those who are contemplating course construction and from banks, insurance companies, financial institutions and federal agencies which are considering course financ-

ing. Because others may have similar problems the questions and the answers given are summarized as follows:

1 What is the worst mistake that can be made?

In my opinion, the most deadly is inadequate financing. Many outlays are necessary in addition to the course itself.

Furthermore, once the course is open for play, immediate profits are seldom



realized. It may take several years before play approaches capacity. There may even be a year or two when operating expenses are not even met. Because so many outlays can be overlooked during the planning stage, an outline of those required before opening has been prepared. (It will appear in the April issue).

2 Do municipal courses offer unfair competition?

Owners of profit motive golf ventures may dread construction of a new municipal layout in their areas, feeling they will never be able to compete with the publicly owned course. In my experience, the municipal layout and the privately owned fee-type course seldom compete. I know of several cases where municipal courses have been built only a few miles from private ventures. In each case, the fears of the private operator have not been justified, although the municipal course has attracted large crowds. The truth is that generally there are plenty of golfers for every course, municipal or privately owned. ©



"The Syngenta Business Institute was an event I had been looking forward to since ... last year. I won't leave you hanging for too long on my review ... it lived up to the hype."

ROB DIFRANCO, *Managing Editor*

On the road again and again

As I've been on the road (or in the air) of late, I've had quite a bit of time to reflect on my time at *Golfdom*. By the time you're reading this, I'll have been with the magazine for three years, a wild thing to think about as it feels like just yesterday I walked through the doors of our Cleveland office a full 45 minutes early.

I came into the golf industry with little knowledge about turf or the people responsible for keeping it alive and thriving. There's still a lot — like, *a whole lot* — for me to learn, but that's where these recent travels come into play.

Over two weeks in December, I took back-to-back trips to North Carolina for outstanding industry events — the Syngenta Business Institute and Green Start Academy — which you can read more about on page 5.

This was my second time attending Green Start — and this time, I finally scored a "Green Start Academy Alumni" pin! This was also my second time at Pinehurst, where John Deere, Envu and Rain Bird have hosted the

event for the last four years.

If you've never been and are an assistant superintendent looking to make your way up the industry ladder, I can't give a big enough endorsement of Green Start.

You won't talk turf — at least during the day — but you will get invaluable advice from superintendents who are previous attendees. Mentors like Bubba Wright from Big Cedar Lodge, Troy Flanagan from The Olympic Club and John Jeffreys from Pinehurst — aka guys with experience hosting men's and women's U.S. Opens.

The Syngenta Business Institute was an event I had been looking forward to since *Golfdom* Digital Media Specialist Sydney Fischer came

back with a glowing review of her experience in 2023.

I won't leave you hanging for too long on my review ... it lived up to the hype. The Wake Forest University staff did a fantastic job with sessions on leading across generations, how to strike a good work/life balance and more.

By far, my favorite part of the event was the roundtable discussions on the final night. Over the last three years, I've heard a lot about the state of the labor market in this industry. To say it's been a mixed bag would be an understatement. As I'm sure you know, some have all the luck with employees and some have little to none.

This discussion had people on both sides of that spec-

trum, and it led to plenty of ideas flying back and forth. I share a few of these in my full write-up about SBI on page 4, and I hope you can get something from them.

A long list of thanks

As I start year three at *Golfdom* — and pen my first column since 2021 — there's a long list of people that I'd like to thank, starting with my wife, Sammi. One of my first purchases after I started at *Golfdom* was an engagement ring, and a year later, we tied the knot.

A special thanks to Ryan Blair, CGCS, at Holston Hills CC in Knoxville, Tenn., for allowing me to visit his course as we prepared for our first-ever Tour Guide issue in 2023. If not for that visit, I wouldn't have come up with the idea for a honeymoon in the Great Smoky Mountains.

Another gigantic thank you goes to Larry Napora at Firestone Country Club in Akron, Ohio. Larry has been a great friend of the magazine — and me — over the last two years.

Larry and Superintendent Tim Gruber were among my first interviews for that 2023 Tour Guide and couldn't have been more welcoming.

Finally, a massive thank you to all of you. I met a lot of great superintendents and assistants during my end-of-the-year travels, and I cannot wait to meet more of you in 2025 and beyond. 🧡

Email Rob DiFranco at: rdifranco@northcoastmedia.net.

The Hot List

BY SETH JONES

Twenty-plus
must-see
products
and must-do
events at the
2025 GCSAA
Conference
and Trade
Show

The 2025 GCSAA Conference and Trade Show is here, and we're back in San Diego!

For this issue, we wanted to create a practical guide to the San Diego show. So we pulled together the following: the next few pages are a short essay by yours truly of booths and events I'm particularly excited about and interested in; on pages 18-19, we are providing a spread of the trade show floor, with spotlights on the booths and partners featured in this issue; and beginning on page 20, our partners explain in their own words why they think you should make time to see them in San Diego.

When you see me in San Diego, stop me and tell me what you think of this new format, and what I missed!

So here we go ... our guide to San Diego 2025!

Must-visit booths

SYNGENTA

Booth No. 3937 and No. 4037

Like it always does, Syngenta has a lot going on at the show ... so much, in fact, that they're treating customers to pre-show videos they can watch before the conference. Go to **Green-CastOnline.com/GIS** (yes, they know that isn't the correct acronym, but hey — it is shorter!) and watch the videos, fill out a form and boom! They'll mail you a set of Cuisinart magnetic grill lights (wonder if I can get those?).

At the show, they're using augmented reality glasses to show attendees how two of their



I've been told the Health in Action 5K is a good time. I'll take their word on it. Pictured are Mark LaFleur, Bert Wagemans and Matt Giese of Syngenta with Rhett Evans, CEO, GCSAA.

products impact five turf pests. The first 300 attendees who watch these videos will receive a free magnetic cell phone power bank.

"We're really leaning into innovation with some big new AIs coming to market in the next 12 months," Mark LaFleur, Syngenta's communications lead, turf and landscape, says. "That includes one that is a new class of chemistry."

As usual, I'll try my best to make sure we're the first in the industry to break that news once it's out there. Oh, Mark also wanted to let you all know that at the above website, you can sign up to get a calendar reminder for the Health in

PHOTO BY: SYNGENTA; ALEX HARVANDI / ISTOCK-GETTY IMAGES PLUS / GETTY IMAGES (HEADER)

Action 5K run that goes along the San Diego Bay and through Embarcadero Park. Syngenta sponsors the run. There is a 5K, and new this year is a 2K. The race takes place Tuesday at 7:30 a.m. Proceeds support the GCSAA Foundation. Somebody let me know how that one goes.

KRESS

Booth No. 5152

Here's a company making its first trip to the GCSAA Conference and Trade Show: Kress, a robotic mower and handheld electric equipment manufacturer, who you've seen in the pages of *Golfdom* over the last few months. Kress invited a group of superintendents and *Golfdom* (exclusively) to the Santaluz Club in California a few months ago. We've also seen this company at the 2024 Equip Exposition in Louisville, and most recently, they were turning heads at last month's *Golfdom* Summit in Orlando.

I talked to DJ Johnson, Kress' executive vice president of sales, while we watched the KR236 quietly go back and forth on the Reunion Resort driving range. Johnson was fresh off making a hole-in-one the previous day (his second one ever). Johnson says

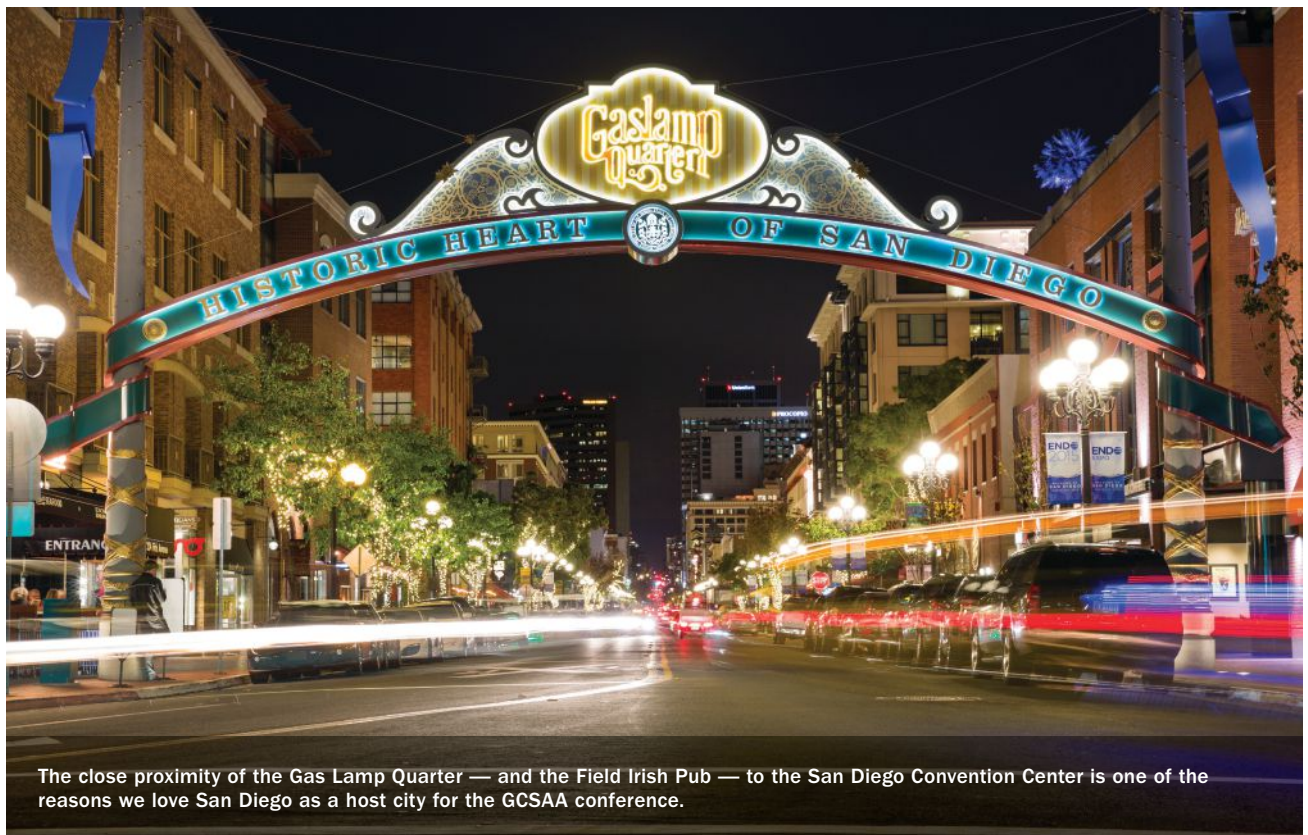


Joshua Goodhart, director of golf course maintenance, Avalon G&CC, Warren, Ohio, listens as longtime superintendent Tim Barrier, now golf business development manager for Kress, talks about the versatility of the KR236.

the company has had a lot of interest from the golf market since they started their robotic golf division nine months ago.

"Labor's an issue for everyone — consistency of labor, produc-

Continued on page 14



The close proximity of the Gas Lamp Quarter — and the Field Irish Pub — to the San Diego Convention Center is one of the reasons we love San Diego as a host city for the GCSAA conference.

Continued from page 13

tivity of labor, efficiency, etc. And robotic mowers help reduce that problem by cutting 24/7, 365 days a year, if necessary,” Johnson said. “And most courses love to talk about how inefficient it is to cut rough. These units are ideally suited to cut rough, so we can move that labor to other places on the golf course that are more critical for play and mechanical support.”

KAFKA GRANITE

Booth No. 5445

As much as we write about maintaining greens, fairways and roughs in the magazine, we also want to give equal space to the importance of other areas of the course. That includes walkways and cart paths. Our friends at Kafka Granite recently partnered with the National Alliance for Accessible Golf to celebrate their efforts to help superintendents make the course ADA compliant.

You can see Kafka Granite either at their booth or at the Sustainability Showcase outside the front of the San Diego Convention Center — it'll be open Monday through Thursday.

“(Kafka Granite) gives you all the benefits of a paved surface,



One of Kafka Granite's many walkways at Erin Hills, the site of the 2025 U.S. Women's Open.

like concrete and asphalt, with a lot of extra benefits,” says Dan Hannan, business development manager for Kafka Granite. “It ties into the natural beauty of the course, and there's a lot of flexibility to it. It gives you a lot of freedom to work with, all while eliminating erosion, dust and mud. It just cleans everything up and looks way better than anything else (superintendents) can put out there.”

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“I spray everything through those dual fans these days. Weekly foliar apps on greens, herbicide, insecticide, nematode treatments, You name it, we probably sprayed it. I have reduced my Primo applications due to the fact that I am getting much improved coverage on the plant.”



Chris Senior, Countryside Country Club
Clearwater, Florida

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NANOOXYGEN SYSTEMS

Booth No. 1710

Something I've been learning more about over the last few months is a new technology that's burst onto the industry ... NanoOxygen Systems. This company has only been around for a few years — last year was their first GCSAA trade show, and last month, they made their inaugural appearance at the *Golfdom* Summit. Many of the attendees I spoke with said the presentation put on by this company was particularly exciting.

I spoke to Ron Pote, owner of the company, and he told me that any superintendent who sees them at their booth or the Sustainability Showcase will learn about why water quality is important to their turf health and how they can monitor it and control it.

“It's so critical to improve their water quality, and we now have a way to do it,” Pote told me. “Most superintendents have to deal with whatever they have. They never had a way to make it better. This is a brand-new technology, it's very exciting for them — and the fact that we have 15 courses that have the system now ... it's a proven technology.”

POROUS PAVE

Booth No. 2317

The team at Porous Pave offers superintendents a recycled product from truck tires. It's useful for multiple applications, from the golf course to the parking lot and clubhouse. This product has applications for cart paths, bunker liners and a new application for a mulch-like product for beds and steep slopes that wash out.

PHOTO BY: DAN HANNAN



Since 2007, Porous Pave has been in use at golf courses as cart paths, bridge decks and signage surrounds, among other applications.

A. John Harvey, ASGCA, ASLA, says the most useful applications are on bunkers — either steep slopes or flat areas — but the product's flexibility gives it multiple applications as superintendents learn about it.

"It's very versatile because it is a pour-it-in-place material," says Harvey. "It could be a decorative pavement around a clubhouse or

even a halfway house or a bathroom facility out on the golf course that instead of using a traditional hardscape, we have a softscape. It's earth tone color in the landscape arena, so it blends and melds more appropriately with the colors that we find on our earth."

Must-attend events

RHETT EVANS' MOUNT EVEREST TALK

Mark your schedule for the Sunrise Celebration on Wednesday, Feb. 5. Headlining the event will be GCSAA CEO Rhett Evans delivering his presentation, "Time's Up! Lead Out!" which tells the tale of his experience summiting Mount Everest.

I've had the good fortune of seeing this presentation twice, once at the National Golf Foundation Annual Meeting and once at the Rocky Mountain GCSA Annual Meeting. Evans told me both were shortened presentations based on a packed speaker schedule and time limitations. I'm excited to see how Evans does when it's his schedule and he can deliver his entire presentation.

The photography and videos he took while on Everest are stun-

Continued on page 16

PHOTO BY: GOLFDOM STAFF

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Rhett Evans will deliver the keynote speech at the Sunrise Celebration on Wednesday, Feb. 5, recapping his dramatic journey summiting Mount Everest.

Continued from page 15

ning. I won't give away any of the presentation here other than to say — *whoa*. If you want to leave a room feeling motivated to step up your game and overcome some challenges, this is the talk for you.

WELCOME RECEPTION AT THE USS MIDWAY

On Monday, Feb. 3, at 6:30 p.m., the show starts off with a patriotic bang. USA! USA!

The USS Midway, the U.S. Navy's longest-serving aircraft carrier in the 20th century, will host the Welcome Reception. There



The iconic USS Midway, one of the many things that makes San Diego great, will host the Welcome Reception once again.



PBI-Gordon will host a party at Petco Park, the home field of the San Diego Padres, from 7:30-10 p.m. on Tuesday, Feb. 4.

are more than 20 aircraft you can get up close to while also seeing your colleagues from around the nation.

Start your afternoon off in the Gaslamp Quarter, then make your way to the USS Midway. By the way, the reception includes a drone show.

PBI-GORDON, TAKE ME OUT TO THE BALLPARK

Petco Park, home of the San Diego Padres, is traditionally one of my favorite party spots to catch up with attendees from around the country when the GCSAA show is in San Diego. This year, our friends at PBI-Gordon booked that spot for an event, which takes place Tuesday night, 6-10 p.m.

"We've been doing these (parties) for the last 10 years, and I have to say, each event has just gotten better and better," says Brett Rieck, regional manager, PBI-Gordon. "Of course, we welcome all of *Golfdom's* readers to the event; there's no need for an invitation. Just wear your name badge from the show, and we'll see you at the ballpark."

THE FIELD IRISH PUB

There's one more stop I have to recommend — our annual Friends of *Golfdom* (FOG) party at the show.

San Diego is a favorite location for us because for the last several shows in San Diego, we have reserved the same place — The Field Irish Pub, 544 5th Ave. This year, we'll be there Tuesday, Feb. 4, from 8-10 p.m. The pub is legit, and I speak from experience — the couple who founded The Field shipped a pub, piece by piece, from Ireland to San Diego.

If you plan on joining us, scan the QR code here. I hope to see you there ... or on the Midway ... or on the pitcher's mound at Petco Park ... or wherever we bump into each other in San Diego. ☺





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With more than 425 exhibitors, it's safe to say the GCSAA Conference and Trade Show is the biggest event in the golf maintenance industry. Here's a map of the layout of the show floor for this year's show, denoting the companies profiled in this issue. And don't forget to stop by booth No. 5926 — that's where you'll find your favorite industry trade magazine.



- | | |
|----------------------|------------------------------|
| 1 DryJect | 11 SePRO |
| 2 Frost | 12 Sipcam Agro USA |
| 3 Hunter Industries | 13 Smithco |
| 4 Kafka Granite | 14 STEC Equipment |
| 5 Kress | 15 Standard Golf |
| 6 NanoOxygen Systems | 16 Steel Green Manufacturing |
| 7 Par Aide | 17 Syngenta |
| 8 POGO TurfPro | 18 Target Specialty Products |
| 9 Porous Pave | 19 ZLINE Bunker Systems |
| 10 Quali-Pro | G Golfdom |

*Map locations were confirmed as of date of publication.





HUNTER INDUSTRIES

Q&A

with **Carl Eberts**
Category Manager - Golf

What makes your product a game-changer for golf course maintenance?

TTS-800 Series golf rotors from Hunter Industries integrate advanced technology with unrivaled power, reliability, and performance to simplify irrigation management and cultivate impeccable playing surfaces in every application.

TTS-800 rotors combine the field-proven benefits of our robust, highly efficient G-80 and G-85 gear drives with a completely redesigned Total-Top-Service body featuring the largest flange compartment in the industry to ensure unmatched ease of serviceability. Furthermore, the pressure regulator and solenoid are easily serviceable without system de-pressurization, which saves significant time during routine maintenance.



How does your offering improve operational efficiency for golf course managers?

No-dig Total-Top-Serviceability means all TTS-800 rotor components are easily accessible from the top without digging, making routine maintenance a breeze. The TTS-800's robust inlet valve includes a replaceable seat seal as well as an exclusive Filter Sentry® mechanism — an industry first.

Thanks to a powerful wiper, Filter Sentry scours the filter clean during every opening and closing cycle of the valve which dramatically reduces the frequency the inlet valve needs to be serviced. Finally, at the heart of any golf rotor

Hunter®
Golf Irrigation



is the gear drive. The high-torque planetary gear drive is the strongest in the industry to mitigate the challenges of reclaimed water and debris infiltration.

In what ways does your product contribute to cost savings in maintenance?

Golf course superintendents have a difficult job when it comes to irrigation management. Playability directly impacts revenue, so effective irrigation is critical at all times. The TTS-800 Series Golf Rotors provide industry-leading distribution uniformity to reduce water use, decrease pump costs, and improve playability.

Our proprietary PressurePort™ nozzle technology optimizes the incoming pressure at each nozzle to increase consistency and maximize distribution uniformity. In water audit challenges comparing distribution uniformity at courses around the world, Hunter systems achieve a 17 percent savings in water use over the competition on average. This will often make the ROI for a new irrigation system very attractive when you factor in savings from water costs, pump energy, and reduced labor for hand watering.

HUNTER INDUSTRIES 1940 Diamond St. San Marcos, CA 92078

 hunterindustries.com/golf  @Hunter_Ind_Golf

GCSAA Conference & Show Booth 2127



WHAT THEY SEE. MADE BETTER BY WHAT THEY DON'T SEE

Take water efficiency to the highest level with best-in-class Hunter Golf solutions!

From our intuitive Pilot® Cloud Software to our top-of-the-line TTS-800 Series Golf Rotors, our complete lineup of industry-leading products is designed to ensure long-lasting performance, simplified maintenance, and maximum efficiency, so you can keep your course green with less effort — and less water.





NANOOXYGEN SYSTEMS

Q&A with **Ron Pote**
Owner

NanoOxygen Systems has developed the best pond water and irrigation water quality improvement technology for golf courses. Our system eliminates cyanobacteria in ponds and improves irrigation water quality to levels of 2-3 times better than rainwater. Prior to our technology, golf courses have had to accept the water quality available and adjust their agronomy program accordingly.

Our ultrafine bubble technology (UFB) uses pure oxygen and ozone gas generated on site, the most advanced cavitation generation unit available (patented technology), the most accurate and reliable inline sensors to monitor the process, and we bundle this into a reliable and effective system that produces real results for our customers.

What are the benefits of a NanoOxygen System?

- Improved soil structure leads to more efficient water and nutrient use by the turf – fewer irrigation cycles and fertilizer inputs are necessary
- Efficient delivery of nutrients due to healthier soil microbe populations and improved root mass
- Enhanced thatch control
- Reduced organic matter due

to increased aerobic microbial population, which may lead to reduced need for core aeration

- Improved water penetration due to Ultrafine Bubble negative charge leads to reduced wetting agent use (particularly in the elevated and mounded areas)
- Reduced chemical use
- Reduced disease pressure
- Reduced/eliminated algae in ponds, especially dangerous cyanobacteria, often introduced through irrigation
- Reduced bottom muck in ponds and reduced odors in ponds and irrigation system
- Oxidation of sulfur & iron compounds to reduce/eliminate black layer
- Reduced/eliminated clogged irrigation nozzles from irrigation pond algae
- Billions of ultrafine oxygen and ozone bubbles persist in the soil, providing a continuous release of oxygen into the turf to combat disease and improve microbial activity and overall plant health

How is the NanoOxygen System water better than rainwater?

Rainwater contains less than 8 ppm of dissolved oxygen (DO), causing a temporary DO increase in your soil, creating the green-up you see after

a rainfall event on your course. The NanoOxygen System increases the DO in your water and subsequently in your soil to levels at least 2-3 times more than rainwater.

Soils require at least 5 ppm of DO to sustain living conditions for roots, microbes and other healthy soil organisms. By irrigating with water with increased DO levels, healthy and sustained levels of DO occur in your soil over time. Increasing the DO in your soil will reduce harmful soil fungi and nematodes that thrive in low-oxygen conditions.

Why does NanoOxygen Systems represent the future of golf course irrigation?

Increased scrutiny of chemical and water use and the ongoing deterioration of water quality at golf courses is accelerating across the country. The sustainable solution is to improve water quality to achieve a safer and more environmentally-focused industry that doesn't depend on chemicals to repair the problems created by poor water quality. We offer a cost-effective system with proven results and satisfied customers that now have a sustainable future centered on having the best quality input used every day on their golf course — water.

NANOOXYGEN SYSTEMS 1190 Clements Ferry Rd, STE-D Charleston, SC 29492

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GCSAA Conference & Show Booth 1710

What if your irrigation water was

2-3x

BETTER THAN RAINWATER?

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- Significantly increases irrigation water dissolved oxygen
- Manages pH and sulfides in Reclaimed water. Eliminates source of black layer
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Algae and pH Management:

- Creates healthy ponds and eliminates algae at the source
- Aerobic water column consumes muck and organic sediment
- Pond fills can be used to distribute ultrafine bubbles across your entire property

Proven Performance:

- Documented reductions in fertilizer, pesticides, and wetting agents
- Reduced water use by up to 30% from increased root mass / length
- High reliability systems – minimal downtime ensures results

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efficient CO₂ -
Carbonic Acid
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DRYJECT

Q&A with **John Paddock** Owner and President

How does your service save superintendents time?

Managers of DryJect service centers supply all the labor to operate our injection equipment. This simplifies the magnitude of planning out a large core aeration project.

How does your service save superintendents labor?

Labor associated with operating aerators is eliminated. Because our machines fully fill each injection hole with sand or other amendments, topdressing and aggressive dragging to work the material in the holes is either greatly reduced or, in most cases, not needed at all.

As a result, several grounds crew workers are freed up to perform other duties that may have been neglected or have required overtime to accomplish.

How does your service save golf courses materials or fuel?

Using the DryJect service will aid substantially in retaining the golf course's normal rounds played pattern when compared to coring, topdressing and aggressive dragging, which diminishes the putting surface playability (or the golfer's perception on playability).

Whether the course is daily fee or private, using DryJect will help retain golfers, resulting in more successful revenue streams.

With DryJect's newly designed hopper with agitation, we now have the ability to inject wet sand. Depending on availability and pricing for



kiln-dried sand, having the capability to inject wet sand may save the golf course a substantial amount of money.

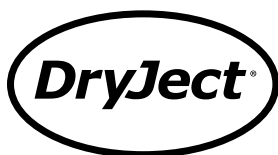
How does your service help generate additional revenue for golf courses?

Golfers marvel at how well the greens putt just after our service. So, happy golfers equal better profits! Here's what one satisfied customer had to say:

"Our data shows that when we core aerate and topdress in early September, we see about a \$30,000 drop in revenue over the next two weeks. When using DryJect, we realize only one day of lost revenue. We estimate a \$19,000 savings in using DryJect over core aeration."

— Justin N. Smith

General Manager, Olde Homestead Golf Club, Pa.



DRYJECT 307 Lincoln Ave., Hatboro, PA 19040

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GCSAA Conference & Show Booth 5551

Thank you for another successful **Golfdom Summit**



A special thanks to our partners for their role in making
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golfdomsummit.com or scan the code





POGO TURF PRO

Q&A with **Carmen Magro, CGCS**
President

How does POGO save time?

Superintendents demand precision. Without it, failure is imminent. The POGO TurfPro system allows supers to know precisely the true condition of their turf, while providing many other insights and measuring stress on turf performance. POGO helps superintendents make the best use of their time with only minutes per day, as we understand both the short- and long-term impacts of less-than-optimal decisions.

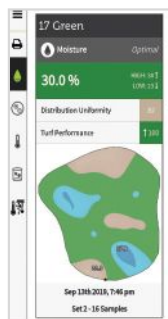
How does POGO save labor?

All superintendents want to know their operations are efficient and precise. The POGO system clearly indicates what the turf sees and what influences it — bad or good — so that the right decisions can be made

“(Carmen’s) innovation of the POGO platform is only the beginning and I very much look forward to seeing where he takes us next. I only wish I had this insight throughout my career, but I know it will serve the industry well for many years to come.”

— **Matt Shaffer,**

Director of Golf Course Operations Emeritus,
Merion GC, Ardmore, Pa.



quickly and efficiently. Further, it is especially insightful at trending conditions and predicting the impacts of current or planned irrigation, fertilization or cultural practices, allowing users to make efficient labor decisions. With POGO’s innovative mapping features, users can quickly visualize their practices and see the results of their operations over time while logging features and attributes specific to their property.

How does POGO save materials?

In only minutes a day, POGO provides supers with the knowledge that they are using materials efficiently and effectively. With the world increasingly putting pressure on the green industry to utilize strong fundamental practices in lieu of

pesticides and other plant protective products, we must be efficient and precise in our decision-making now more than ever. This is especially true with the use of water, nutrients and cultural practices designed to improve the natural performance of turf to meet the demands of the game. POGO is the only scientifically based monitoring and analytical system in the industry that never requires calibration and always measures the most influential component of the turf system that impacts surface performance and true health. It remains accurate and precise through the ever-changing dynamics of turf systems and allows for instantaneous mobile mapping analytics.

How does POGO impact revenue?

It is difficult to put a price on the loss of value due to suboptimal conditions. Such a loss has terrible consequences on facilities and the quality of life of the superintendent and staff. Using the POGO system prevents the loss of revenue by informing superintendents of turf stress long before symptoms appear. Making the best decisions for advancing turf performance requires knowing what the turf conditions are and where they are going with every influential variable that impacts it. The POGO system is the essential monitoring and analysis system that the industry depends on to know what the actual conditions of the turf system are.



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Catch Carmen Magro, PhD
talking everything monitoring
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Education Session in San Diego

See POGO at **BOOTH 2327**



Get to know the POGO System at
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info@pogoturfpro.com or 1-971-420-0500



POROUS PAVE

Q&A with **A. John Harvey, ASGCA, ASLA**
Parks, landscape and
golf industry specialist

What are the benefits of the Porous Pave Paths and Sand Guard Bunker Lining system?

- The Porous Pave Paths and Sand Guard Bunker Lining System are incredibly permeable and help drain thousands of gallons per hour, about 9,300 inches.
- It is made from recycled tires and is great for the environment. The rubber eliminates damage if a golfer grounds a club.
- It is flexible and expands and contracts with freeze/thaw cycles and expansive soils and high heat to resist cracking.
- It is durable, with a 15-to-20-year life expectancy.
- There are minimal site impacts on turfgrass. It is mixed right at the bunker, with no heat process or cement trucks required, minimizing course damage.
- No sub-base is needed.
- It reduces bunker sand maintenance and keeps sand in place after storms with great ROI.
- We can train maintenance staff and contractors to install paths or bunker liners.
- Many states offer grants for funding



the reuse of scrap tires in golf and landscape applications.

- Only simple landscape and concrete tools are needed for mixing and installation. Vegetable oil is used as the release agent from the mixer, while water misting helps cure the binder.

What separates your product from others on the market?

Porous Pave and Sand Guard is a poured-in-place material that is mixed on site. There are fewer steps and vendors involved with procuring materials and the installation process.

We have solutions that come in different colors and reduce ball bounce by 73 percent, when compared to traditional concrete or asphalt paths.

Use Porous Pave as a pour over

an existing path (depending upon its condition) or as a new 2-inch thickness path with a specified aggregate base material.

In bunker liner applications, Sand Guard's strength, permeability and flexibility of the 1-inch thickness is cost-effective and resilient to accidental strikes by maintenance equipment, bunker rake attachments and golf clubs.

Recycling materials is fast becoming an important part of environmental stewardship in the construction and golf industry.

Part of our mission at Porous Pave is educating our customers on the benefits of using our path-paving materials and bunker liners — sustainable and functional resources that are cost-effective.

POROUS PAVE 4385 East 110th St., Grant, MI 49327

(888) 448-387 PorousPaveInc.com @PorousPave @porous-pave-inc

GCSAA Conference & Show Booth 2317



Invest in Excellence.

Sustainable solutions for a superior golf course

Storm events can create bunker washouts, contaminate sand, and reduce playability. Sand Guard enhances your ROI by protecting your bunker features to remain clean and consistent by stabilizing sand and minimizing maintenance. Porous Pave reduces ball bounce on cart paths by 75%, enhances traction, and provides exceptional permeability & durability while remaining flexible, eliminating cracking.



APPLICATIONS:

CART PATHS • BUNKER LINERS • WASH STATIONS • CART STAGING AREAS
COURT SURROUNDS • BRIDGE DECKS • MAINTENANCE STRIPS





Dave Delsandro
Partner at Agronomic Advisors

QUALI-PRO

Q&A

Jeff Corcoran
Partner at Agronomic Advisors



How did Agronomic Advisors connect with Quali-Pro?

We were both ardent Quali-Pro users in our previous careers as golf course superintendents at prestigious venues. When we began Agronomic Advisors, Quali-Pro approached us with an opportunity to develop and lead industry initiatives to facilitate brand awareness, industry outreach, and professional development.

What initiatives has Quali-Pro developed for the turfgrass industry?

Quali-Pro has pioneered the creation of an advisory group comprised of talented agronomic and business-minded superintendents known as the Elite Advisory Team (EAT). This lineup of accomplished superintendents works with various facets of the Quali-Pro team to provide feedback

and guidance on several aspects of Quali-Pro's business, such as R&D and agronomic programs to improve Quali-Pro's posture and presence in the turfgrass industry.

Quali-Pro has also founded an innovative professional development initiative for assistant golf course superintendents, Quali-Pro University (QPU). This program focuses on filling a professional development void in the turf industry by connecting accomplished assistants through education and networking. The curriculum provides essential educational development through access to recognized industry leaders.

Q&A with **Michael McCormick**
Superintendent, Oakmont CC

Describe the history and partnership between Quali-Pro and Oakmont.

Oakmont Country Club began utilizing Quali-Pro products on a trial basis in 2017. Initially, this decision was made to



reduce spray intervals, maintain existing plant-protectant budgets and ultimately enhance the product on course.



Michael McCormick

As we began to utilize the Quali-Pro portfolio, it became apparent that the quality and reliability of the product line met or exceeded other brands.

Upon experiencing the support behind the products from the Quali-Pro team, we rapidly increased the utilization of Quali-Pro products. Since 2018, we have relied on Quali-Pro as our premier plant-protectant provider.

How will Quali-Pro's products and partnership help you as you prepare for the 2025 U.S. Open?

As we approach the championship next year, the Oakmont grounds maintenance team will strive to produce conditions that set the standard within our industry. Quali-Pro will be an integral part of this as we work to ensure playing surfaces are free from any potential disease, insect, or weed breakthrough. Oakmont has formed a historic partnership with Quali-Pro, their product line, and their team of professionals who have routinely supported our efforts over the last several years. This partnership will undoubtedly reap benefits for Oakmont and the best players in the world.

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SEPRO

Q&A

with **Kyle Briscoe, Ph.D.**

Senior Technical Development Manager

What makes your product a game-changer for golf course maintenance?

StriCore Herbicide® is the first new pre-emergent with a new active ingredient in over a decade, specifically developed to tackle tough weeds like *Poa annua*, Goosegrass, and Crabgrass. What really sets it apart is its underutilized mode of action (Group 15), which reduces the potential for weed resistance. Unlike traditional herbicides that inhibit root growth, StriCore targets shoot growth, a key distinction of the product, reducing the risk of stress or damage to the turf.

How does your offering improve operational efficiency for golf course managers?

StriCore is safe to use on both warm- and cool-season turf, making it a versatile solution for a wide variety of courses. StriCore helps streamline maintenance by providing long-lasting control when integrated into



a program with overlapping residual herbicides. On top of that, it mixes well with other herbicides, which simplifies the application process and keeps things running smoothly on the course throughout the year. With StriCore, superintendents can focus on other priorities knowing their weed control is taken care of.

In what ways does your product contribute to cost savings in maintenance?

StriCore delivers exceptional control from the start, helping to prevent costly issues later in the season. By incorporating StriCore into a comprehensive pre-emergent program, superintendents can extend

control, enhance effectiveness, and tackle a broader spectrum of weeds, ultimately reducing the need for costly postemergence applications.

How does your solution enhance the overall player experience on the course?

Players notice the difference when a course is in top shape. With StriCore, you get clean, weed-free turf that looks great and plays even better. A smoother ball roll, and lush, healthy grass, create an experience golfers love and keep them coming back. It's all about raising the bar for turf quality and consistency.

What future trends does your product align with in the golf industry?

StriCore fits perfectly with the golf industry's focus on innovative and efficient turf management solutions. Its underutilized mode of action helps reduce the spread of resistant weeds, improving turf quality and playability. Being safe on both warm- and cool-season turf makes it adaptable to a variety of climates and conditions. StriCore is a truly forward-thinking solution that helps superintendents stay ahead of industry challenges.



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Jeff Churchill
Domestic and International Sales

SMITHCO

Q&A

Steven Johnson
Regional Sales Manager



What makes your product a game-changer for golf course maintenance?

The Smithco Star Command II powered by Ag Leader InCommand 1200 provides us with a display second to none, boasting a robust 12-inch display with high resolution for outstanding visibility. The full-color, high-resolution touchscreen display is easy to view and offers powerful, precision application tools.

Built-in guidance, full-screen mapping, application control, on-course monitoring, real-time data logging, and optional automated steering are all offered. These key performance features make up the core functionality of the display and operating system with RightSpot™ Pulse Width Modulation, which:

- Enables automatic 10-inch nozzle-by-nozzle control while maintaining consistent rate, pressure, and droplet size at every nozzle.
- Additionally, RightSpot includes cutting-edge turn compensation software to provide accurate application of all products further while turning.
- With RightSpot productivity increases, overlaps are reduced and achieve consistent results throughout a broad range of speeds, rates and pressures, all while navigating challenging terrains such as wetlands, bunkers, and uniquely-shaped play areas.

How does your offering improve operational efficiency for golf course managers?

Smithco Star Command II GPS-guided equipment ensures accurate applications of spray chemistry, reducing overlap and under-treatment, thus reducing input cost by controlling overspray and double applications.

In what ways does your product contribute to maintenance cost savings?

By improving precision applications, Smithco's OEM



partnership with AG Leader reduces waste and avoids costly inputs. Additionally, optimizing labor with the use of Pulse Width Modulation (RightSpot) reduces operational costs significantly due to increased productivity.

How does your solution enhance the overall player experience on the course?

Maintaining consistent turf quality across greens, fairways, and roughs ensures an exceptional playing surface. Players benefit from improved course conditions and aesthetics, supporting sustainable environmental practices now and into the future.

What future trends does your product align with in the golf industry?

Smithco aligns with the growing emphasis on sustainability in the golf industry. Its precision tools help courses meet environmental standards by minimizing chemical runoff with the precision application of chemistry.

Smithco

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LEGENDS OF

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MEET CHARLIE

Charlie is our Inventory Coordinator and has been with Smithco since 1988. Whether it's managing the warehouse or hauling equipment, Charlie does a little bit of everything to keep things running smoothly. His day-to-day involves a lot of walking and hands-on tasks, ensuring that everything is where it needs to be. Charlie loves working at Smithco because of the family-like atmosphere and the many little perks that come with the job. But his favorite part? It's the camaraderie with his coworkers that makes each day worthwhile.



CHARLIE

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STEC EQUIPMENT

Q&A

with **Brandon Cox**

Northeast Territory Sales Manager

What makes your product a game-changer for golf course maintenance?

The GKB Sandfiller is a product that all golf courses should be considering as it can verticut, remove & clean up organic material and fill the verticut slit with sand all in one pass from the back of a 45 hp tractor. The Sandfiller can achieve up to a 10 percent organic matter exchange on whatever part of the course you use it on from greens, approaches or tee boxes all while being operated by a 2-man crew.

How does your offering improve operational efficiency for golf course managers?

The verticutting, removal of organic matter and replacing sand in the slit in one pass helps minimize downtime for rounds, low labor input allows 2 people to operate the machine, allows you to maximize your labor pool.

In what ways does your product contribute to cost savings in maintenance?

The high rate of organic exchange could allow you to skip a core aeration and once again the minimal labor to run the machine cuts down on input costs associated with more traditional verticutting, top dressing or core aeration practices.

How does your solution enhance the overall player experience on the course?

The removing of the organic thatch layer from the course allows firmer surfaces, less downtime from weather and overall better playability for your course and golfers.



What future trends does your product align with in the golf industry?

The GKB Sandfiller helps superintendents as they are pressured to play more and more rounds on their course with even less time to perform routine maintenance, complete cultural practices and improve the health of their course.



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STANDARD GOLF

Q&A

with **Matt Pauli**

Vice President, Director of Marketing

What makes your product a game-changer for golf course maintenance?

We are introducing a brand-new hole cutter and an improved version of a staple at the GCSAA Conference and Trade Show. The HammerStrike Hole Cutter is built

for superintendents who demand accuracy and durability without overspending, the HammerStrike Hole Cutter is a game-changer. Featuring a powerful hammer-action design and a cutting-edge foot ejection mechanism, it guarantees consistent, perfect cuts every time.

With a built-in bubble level for precision, no cumbersome ejector rod for hassle-free transport, and a price point hundreds less than competitors, this USA-made tool is redefining value without compromise.

We have also improved our **Magnum Hole Cutter and will introduce the Magnum Pro Hole Cutter in San Diego.** Taking the trusted traditional design of a “twist and turn” hole cutter to the next level, the Magnum Pro Hole Cutter is stronger, smarter, and more comfortable than ever.

A reinforced neck and deep-penetrating screws provide

maximum durability, while a self-locking ejection handle ensures seamless movement across greens. The integrated bubble level delivers flawless alignment with every cut,



and the ergonomic golf grip handle offers superior comfort and control. It's the tool you can rely on to get the job done right every time.

In what ways does your product contribute to cost savings in maintenance?

The hammer-action or “pound down” hole cutter has been very popular over the years, but the one main negative has been the price. Yes, we think the SG Pro at \$1650 is the best hole cutter in golf, but if a Superintendent is looking

for the hammer-down style hole cutter, they can buy an equally expensive one from a competitor or the only other hammer downhole cutter for almost \$900.

Now, the Hammer-Strike Hole Cutter is hundreds of dollars less than its cumbersome competitor. We feel it is a real game changer.

The added strength, stability and features of our Magnum Pro Hole Cutter once again bring superior craftsmanship in a USA-made hole cutter to the golf course maintenance team. If budget is a concern, these

2-hole cutters are a welcomed sight.



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STEEL GREEN MANUFACTURING

Q&A

with **Matt Smith**

Co-Founder and Sales Manager

What makes your product a game-changer for golf course maintenance?

The SGXL allows superintendents to accurately cover lots of area in a short amount of time. It also has many helpful features that make applications easy, like the pressure control system, which keeps spray pressure the same while turning nozzles on and off. A granular attachment kit is also available.

How does your offering improve operational efficiency for golf course managers?

The SGXL has a 120-gallon capacity and a 14-foot rear-mounted breakaway boom, allowing for quick applications and fewer stops. It comes standard with a 2.5-gallon foam marker, which can increase accuracy. Its hillside assist system and 100-foot hose reel make traveling and making applications off the beaten path easy, too. The SGXL also comes with an LED light bar, allowing for early-morning applications.

In what ways does your product contribute to cost savings?



"The SGXL has been a great purchase for our club. The versatility it offers surpasses traditional sprayers/spreaders, in my opinion. I have found it easier to operate and have noticed much fewer skips and less overspray since the operator is so close to the nozzles. It [the SGXL] has made maintaining our Himalayan green more efficient than a traditional sprayer. Plus, you can exchange the spray tank for a hopper to apply granular products. The operator can take eight extra bags [of granular product] with them, greatly reducing application time and trips back to the shop. I highly recommend the SGXL to anyone interested in a new sprayer/spreader!"

— **Josh Adams**

Head golf course superintendent, Woodhaven Country Club, Louisville, Ky.



over the phone or video chat.

How does your solution enhance the overall player experience on the course?

The SGXL is meant to quickly and accurately apply products on the course, letting superintendents squeeze in applications during tight windows that don't interrupt play. Players will love the quality of the course without ever having to see or hear the machine that made it possible, letting them focus on what matters — the game.

Every SGXL has a detailed owner's manual that is designed to let superintendents and their teams easily work on machines themselves. All of the machine's internal components are easily accessible, and we're available to guide you through maintenance tasks

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ONE MACHINE TO REPLACE THEM ALL

With an industry-leading **120-gallon capacity** and a **14-foot rear-mounted breakaway boom**, the SGXL lets superintendents accomplish more in less time. With plenty of helpful standard features, it's the only machine many courses will need.

Scan the QR code
to check out the SGXL



SGXL

Plus, the optional SGXL Granular Attachment Kit lets you easily convert your SGXL sprayer into a granular machine, giving you **two high-capacity machines in one**.



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TARGET SPECIALTY PRODUCTS

Q&A

with **Steve Loveday**

Turf Fuel Product Development Manager

How do your products save time?

Since its inception, Turf Fuel has made it easier to maintain high-quality turf. Our products produce an unparalleled plant fitness level, conditioning plants to overcome stress and adversity through increased photosynthetic activity and plant defense system activation. That means when you use Turf Fuel your plants will look great and be ready for whatever you have to throw at them.



How do your products save labor?

One of the most significant examples of our products saving labor costs is our portfolio of wetting agents and soil remediation products. Anyone who has stood over localized dry spots (LDS) for hours with a hose can appreciate the amount of time it takes to hydrate these areas adequately. We have technologies that effectively

rewet dry areas with little effort and even solutions that eliminate LDS. Our specialty line also has product solutions to make pesticide sprays more effective. Whether you're dealing with drift, high pH, active ingredient mobility in the plant, on-target deposition or even rain fastness, we have a solution for your need.

How do your products save materials and fuel?

Our specialty products improve a plant's drought stress resistance by creating a unique balance between water and air in the root zone while conditioning plants for better water use efficiency. This combination improves irrigation cycle effectivity and reduces the need for hand watering. Our soil and nutritional products create a synergy between plant and soil, resulting in extremely healthy plants that are highly resistant to stress.

We also have nitrogen control technologies to improve growth rates in areas like fairways. More growth control allows golf courses to save fuel with decreased mowing needs



and significantly fewer clippings.

How do your products help generate additional revenue?

Our products help turf managers achieve optimal playing conditions while maintaining peak aesthetics by optimizing photosynthetic abilities and overall turf quality. We've blended high-quality raw materials with cutting-edge stress-fighting technology. The result is turf that can withstand the traffic of outings and tournaments, allowing extra revenue opportunities without jeopardizing daily play.

In what other ways do your products make golf courses profitable?

Our product solutions help turf managers build strong turf capable of standing up to the cultural practices needed for exceptional putting surfaces. Higher-quality playing surfaces bring in more rounds while increasing the overall stress and disease resistance of the turf to help save budget dollars.



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ZLINE BUNKER SYSTEMS

Q&A with **Casey Jones**
National Sales Manager

What makes your product a game-changer for golf course maintenance?

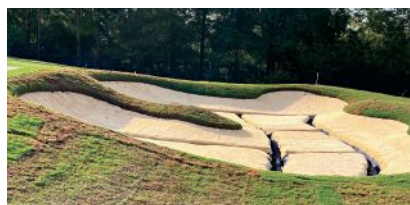
ZLINE provides operational and financial benefits while building the long-term sustainability of the golf course and its operations.

How does your offering improve operational efficiency for golf course managers?

ZLINE provides excellent erosion and contamination protection, which allows the course to be operational at times when other courses may be delayed for repairs. Keeping the bunkers continuously in play and the course operational contributes to maintaining pace of play, aesthetically appealing conditions and providing positive golfer experiences.

In what ways does your product contribute to cost savings in maintenance?

The liner system saves considerable manpower and reduces delays to the course by way of its superior full bunker cavity protection while also



extending bunker sand life by keeping the material substantially cleaner during and after routine maintenance and storm events.

How does your solution enhance the overall player experience on the course?

Overall player experience is enhanced

as players will be able to experience well maintained bunkers at all times, while benefiting from the playability of clean bunker sand that provides consistent playability on every visit to the course.

What future trends does your product align with in the golf industry?

ZLINE is constantly testing new products and accessing the evolution of the golf course, architectural trends and conducting case studies to determine best use scenarios to meet the future needs of the golf course industry.

"The consistency of the ZLINE bunkers is incredible. The bunkers have been excellent – we have had far fewer washouts. The original bunkers were grass faced and in this iteration we have flashed the sand – which would have caused huge problems with our previous liner, but with ZLine is not an issue. We have a lot of animals on the property, such as deer and foxes. Foxes were burrowing in the bunkers and they were just ripping the fabric liner to shreds. I've seen foxes try to dig into bunkers that are lined with ZLine. They can't get anywhere. My only concern is that they'll abandon the bunkers and go dig up the greens!"

— Tom Havelka

Superintendent, Spring Lake (N.J.) GC



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WITH ZLINE BUNKER SYSTEMS



FROST

Q&A with **Ken Rost** President

What future trends does your product align with in the golf industry?

The storage of knowledge and the processing of information has taken up a lot of space in the minds of Superintendents. However, today, there is a lot more information to process. There is soil moisture data, fertility data, weather data, turfgrass

variety data, growing degree day data, and mapping data just to name a few. We even have remote sensing data such as NDVI and NDRE that can give overall turf health information.

All this data is just information that can be processed into knowledge, but it doesn't pay off until an actionable result is put into play. The most valuable knowledge gained from the various data sources allows for the

categorization of different levels of spray inputs. It becomes easy to see that not all areas of a property need to be treated the same, so why should they? This has been the leading value proposition for customers of Frost Inc's Ninja GPS spray control system. The Ninja system simply executes applications relative to a prescription in the form of a map.

How does your offering improve operational efficiency for golf course managers?

In addition to the efficiency improvements that the Ninja GPS system provides customers, the Ultimix line of Pre-Mix stations make every spray day better. Pre-mixing products and having them ready to load keeps the sprayer out on the course spraying, getting the job done quicker.

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KAFKA GRANITE

Q&A

with **Dan Hannan**

Business Development Manager,
Golf and Recreation

What makes your product a game-changer for golf course maintenance?

Kafka's Wax-Coated Aggregate pathways and bunkers significantly reduce maintenance time and costs by addressing common issues such as erosion, washouts, and dust. These durable, low-maintenance materials minimize the need for frequent repairs, especially after heavy rainfall, while offering a more natural look than traditional paving materials like asphalt or concrete. Those materials often require sealing and crack repair or develop other maintenance challenges, leading to costly labor and



"We wanted a natural looking path with an easy install that wouldn't wash away when it rained. Kafka's Wax-Coated Aggregate cart paths checked all the boxes."

— **Garrett Holt**

Director of Agronomy, Red Feather Golf and Social Club, Lubbock, Texas

material expenses. In contrast, Kafka's Wax-Coated Aggregate is designed for long-lasting durability, reducing the frequency and cost of repairs, ensuring a more cost-effective solution over time.

How does your offering improve operational efficiency for golf course managers?

Installation of Kafka's Wax-Coated Aggregate is straightforward, requiring no specialized equipment. The process can be completed with minimal disruption to the course and its day-to-day operations, ensuring courses can maintain regular rounds without costly downtime or repairs to surrounding turf. Additionally, the option to perform installations in-house can further reduce costs, and can easily be phased over time to accommodate other critical tasks with shared resources. Kafka's Wax-Coated Aggregate is designed to be easily stored for later use, minimizing waste and offering flexibility for future updates or expansion projects.

How does your solution enhance the overall player experience?

Kafka's Wax-Coated Aggregate enhances the player experience by providing smooth, quiet, dust-free paths that improve both walkability and cart travel. Its natural appearance blends seamlessly with the surrounding landscape, enhancing the aesthetic of the course while maintaining a more organic feel compared to asphalt or concrete alternatives. The low-maintenance design ensures that paths remain intact, even during inclement weather, preventing interruptions.

What future trends does your product align with?

Our Wax-Coated Aggregate is in line with the golf industry's growing trends towards sustainability, low-maintenance materials, and accessibility. These products are eco-friendly, erosion-resistant, and ADA accessible, helping courses reduce their environmental footprint while improving accessibility for adaptive golfers.

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GCSAA Conference & Show Booth 5445



SIPCAM AGRO USA

Q&A

with **Todd Mason**

Senior Director, Turf and Ornamental

What makes your product a game-changer for golf course maintenance?

Performance, flexibility, and peace of mind. Those were the driving forces behind the concept of ETQ Flex®. The ETQ® complex was developed to aid in a turfgrass plant's survival during abiotic stress periods. Developed in-house by our chemist, it helps maintain healthy plants during peak abiotic stress periods when

relative leaf water content, chlorophyll production and root mass are the most vulnerable. Its flexibility gives the turf manager the ability to apply it alone or in conjunction

with fungicides to help thwart the additional stressors of pathogens.



How does your offering improve operational efficiency for golf course managers?

The ETQ® complex is rapidly absorbed, staying on its target—the turfgrass plant—unlike other products



SIPCAM AGRO
USA

The Cup Cutter Test



Green pigment layer from 2021, the year a Turf Manager stopped using pigments on turf.

that can end up in the soil profile over time. Studies demonstrate that repetitive applications of the ETQ® complex help turfgrass maintain necessary components for photosynthesis, reducing the harmful effects of heat and drought stress. Ultimately, healthier plants require less inputs and improve efficiency.

How does your solution enhance the overall player experience on the course?

Healthy turfgrass plants improve playability and enhance aesthetics. Whether it's a fairway, tee or putting green, healthy green turf can improve ball roll and stance. ETQ Flex® delivers



Turf treated with ETQ every seven days during the growing season for the past six years.

just that: playable, healthy turf when conditions aren't the most favorable for plant growth. Its absorption from root to shoot allows the ETQ® complex to protect the entire plant and maintain the beautiful color and quality that golfers look for when on the course.

What future trends does your product align with in the golf industry?

Reduced inputs targeting healthy turf is a challenge in today's environment. ETQ Flex® helps a Turf Manager maintain plant health by maximizing what's in the spray tank. This new ETQ® product allows flexibility when considering those inputs.

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TEXAS GOLF HALL OF FAME ADDS LEGENDARY AGRONOMIST

By Mike Kenna, Ph.D.

Marvin H. Ferguson, Ph.D., a 2024 inductee into the Texas Golf Hall of Fame, is celebrated nearly 40 years after his passing on Jan. 10, 1985. Renowned as the “father of the green construction method,” he authored the *USGA Method of Putting Green Construction*, a guide that remains the cornerstone of green construction in the U.S. and worldwide.

Born in Buda, Texas, on June 16, 1918, Ferguson graduated from Texas A&M in 1940 with a bachelor's degree in agronomy. He began his career at Arlington Turf Gardens in Virginia, contributing to USGA-USDA turfgrass research. When the Pentagon replaced the gardens, he oversaw the relocation of turfgrass specimens to the USDA Plant Industry Station in Beltsville, Md.




The 1984 USGA Research Committee (left to right): Paul Rieke, Ph.D., James Prusa, George Bard, Alexander Radko, James Moncrief, James Watson, Ph.D., Charles Smith, Marvin Ferguson, Ph.D., and William Bengeyfield.

After serving for a year as a U.S. Navy medical corpsman in 1943 and earning a Ph.D. in plant sciences in 1950 from the University of Maryland, Ferguson returned to his home in Bryan, Texas, as a professor of agronomy at his alma mater.

In 1953, while teaching and counseling graduate students at Texas A&M, he joined the USGA Green Section, where he developed innovative methods for testing soil and sand mixtures to improve putting green performance. In 1959, he built the first USGA-standard putting green at Texarkana Country Club and published the *USGA Method of Putting Green Construction* the following year.

Ferguson transitioned to private industry in 1969, founding Agri-Systems of Texas. His company designed and constructed 10 golf courses while conducting soil analysis. He also joined the American Society of Golf Course Architects, contributing to its research committee and the newly formed USGA Turfgrass Research Committee in 1983.

After 60 years, Ferguson's pioneering work in putting green construction has profoundly influenced the game of golf, leaving a legacy that endures today.

To learn more about the life and accomplishments of Marvin H. Ferguson, Ph.D., please visit texasgolhof.org. 

NEWS UPDATES

NIEWOLA JOINS USGA GREEN SECTION

Ross Niewola, CGCS, recently joined the USGA Green Section as an agronomist for the western region.

Niewola has worked in the golf course maintenance industry for over 15 years. Most recently, Niewola was the golf course superintendent at Walla Walla (Wash.) Country Club.

Originally from Virginia, Niewola was an Eagle Scout and attributes his love for the outdoors to that upbringing, according to the USGA. He was advised early on to be the best possible agronomist, he should get as many types of experiences as possible.

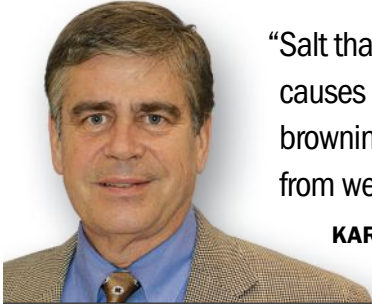
Throughout his career, Niewola has worked at and/or hosted 13 tournaments for the PGA Tour, the LPGA and the USGA.

A Penn State graduate with a degree in turfgrass management, Niewola has continued his education at conferences and application-only events like the Syngenta Business Institute and the Green Start Academy. He credits much of his success to his mentors, including Chris Dalhamer at Pebble Beach, Shawn Emerson at Desert Mountain and Stu Rowland at The Madison Club.

“BY PROVIDING SUITABLE HABITAT FOR AMPHIBIANS, THEY WILL OFTEN ARRIVE INDEPENDENTLY AND CAN PROVIDE PEST CONTROL ...”

Michelle Boone, Ph.D., and Holly Puglis, Ph.D.

(see story on page 52)



“Salt that comes into contact with leaf tissue causes a burn. This often results in the browning or yellowing of turf after flooding from weather events like a hurricane.”

KARL DANNEBERGER, PH.D., *Science Editor*

Racing against saltwater damage

In late September 2022, Hurricane Ian caused massive damage and flooding in Florida. Out of that storm came an iconic video of a McLaren P1 floating away down a street. This new \$1.15 million (\$2 million on the resale market) car that the owner purchased 10 days prior went up for sale later. It was purchased by a YouTuber who has been rebuilding the vehicle over the past year (you can follow the process through his videos.)

The most significant issue is that the car sustained not just ordinary flooding but saltwater flooding. Salt intake into and around an engine is devastating to its operation. Those who live in the snowy areas of the United States and have restored classic cars are aware of the corrosive effect road salt has on the metal of a car.

The corrosive effect of salt can occur quickly. Metal corrosion begins within hours of salt exposure. On golf courses, salt water, in general, can cause damage to turfgrass equipment. Corrosion occurs when metal reacts with sodium. Fortunately, polyvinyl chloride (PVC) pipe used in golf course irrigation is corrosion-resistant.

Still, any metal parts associated with contact with salt or effluent water must be cleaned. This also applies to turf equipment; removing salty ir-

rigation water from mowers and other equipment through cleaning increases the longevity of the equipment.

Saltwater flooding is detrimental to golf course turf as well. Salt that comes into contact with leaf tissue causes a burn. This often results in the browning or yellowing of turf after flooding from weather events such as a hurricane. This is the most frequent concern and question I get from friends, professionals and acquaintances who work or own property in Florida.

The browning results from salt stress, where the water within the leaf is physically extracted from the leaf due to the osmotic potential gradient set up by the salt concentration. This type of injury to the leaves can occur quickly in the aftermath of the flooding.

The immediate remediation efforts should focus on the removal of

flood water through both surface and subsurface drainage. Similar to salt's effects on metal, which can occur in a short period, osmotic stress can cause plant damage quickly. Long-term practices focus on salt removal from the turf. The primary procedure involves the use of gypsum and leaching of the salts with fresh water (rain or irrigation).

On sandy or high sandy soils found throughout Florida, normal rainfall over time leaches much of the salt through the soil profile. Fresh water applications, either by rain or irrigation, dilute the residual salts and reduce the osmotic stress in the soil.

For finer-textured soil, gypsum is added prior to leaching. Gypsum or the calcium that is gypsum displaces the sodium in the soil, allowing the sodium to be leached down and through the root zone. Gypsum tends to dissolve slowly, so finer ground products should be used. The presence of sodium in the soil actually enhances the solubility of gypsum. If irrigation is not available, make multiple applications in small amounts prior to rainfall events.

Salt is detrimental to both living and inanimate objects. Salt affects the workings of a turfgrass plant by damaging root systems which can cause an increased likelihood of drought kill, reduced drought tolerance and increased root and crown diseases.

While salt can reduce a multimillion-dollar McLaren to a pile of junk, restoration with both turfgrass systems and cars is a long process that is often expensive. If you live in regions where salt is a potential issue, maintain a long-term view of the damage that can occur. ☺

Karl Danneberger, Ph.D., *Golfdom's* science editor and a professor at The Ohio State University, can be reached at danneberger.1@osu.edu.

//RIBBITING RESEARCH

Can golf course ponds be a safe haven for amphibians?

By Michelle Boone, Ph.D., and Holly Puglis, Ph.D.

Although a golf course will never replace unfettered nature, it is a green space that can preserve some of the local biodiversity of an area. Golf courses can benefit amphibians, such as frogs and salamanders, which are experiencing declines worldwide due to habitat loss, disease, chemical contaminants and exotic species (7).

Pond-breeding amphibians start their lives in water and metamorphose to live on land until they return to ponds to reproduce, making them critical players in aquatic and terrestrial ecosystems. Because designers frequently plan wetlands on golf courses, these courses have the potential to attract local amphibians. Amphibian communities are most diverse in habitats with temporary ponds because these habitats are nutrient-rich and lack predatory fish.

Because frogs and toads feed on algae as tadpoles, they help clear pond water and reduce the likelihood of floating algal mats. Salamander larvae feed on larval mosquitoes in the water, reducing the number of flying pests. As

adults, all amphibians eat insects and are voracious predators, reducing the number of nuisance species.

Pesticides combat pest species, but they have financial and time costs, not to mention environmental costs. Although they can eliminate algae or mosquito larvae for one season, managers may need to spray yearly or multiple times yearly. Pesticides can also reduce the abundance of natural invertebrate predators of insect pests, which may require greater chemical management.

Additionally, many courses use herbivorous fish to control algae or mosquitofish (*Gambusia* spp.) to prey upon mosquitoes. While stocking ponds with fish may be a one-time investment, it will likely exclude the potential for diverse amphibian communities.

For instance, we found that the presence of fish, regardless of their diet, can negatively influence amphibians. By providing suitable habitat for amphibians, they will often arrive independently and can provide pest control over time without any significant investment from course managers (1).

If using native amphibians as



Research provided and funded by USGA.

biocontrol agents sounds great, then what does it take to attract diverse amphibians to your course? When golf courses are relatively close to natural habitats, it can be as simple as “build it, and they will come.”

Most of the courses we have visited appear to have some amphibians using those sites. The amphibian populations on a golf course can be self-sustaining, or population sinks that attract local amphibians from nearby sites which fail to produce offspring.

In the past, our lab has investigated if golf courses can provide suitable habitats for self-sustaining amphibian communities. Initially, we conducted studies in Missouri at two golf courses and two reference ponds using enclosures containing larvae of three local amphibian species in the presence or absence of overwintered bullfrog (*Rana catesbeiana*) tadpoles (2), a common competitor found in golf course ponds (6).

We thought golf courses would be poor habitats for amphibians because of fertilizer and pesticide use, which could subsequently enter aquatic environments where amphibians develop. However, we were surprised that amphibians in golf course enclosures without bullfrog tadpoles did as well or better than those at natural reference sites (2).

Golf course ponds that mimic the natural hydrology of temporary ponds by drying in late summer to early fall can help support native amphibian

FIGURE 1



The USGA supported a study in Oxford, Ohio, by scientists at Miami University to examine how buffer vegetation around ponds could benefit amphibians. The goal was to reduce nutrient and pesticide runoff into ponds and provide a valuable habitat for adult amphibians to survive during the winter.

PHOTO COURTESY OF USGA

communities by excluding some of their competitors and predators (2). Pond drying reduces the presence of amphibian competitors like bullfrogs or green frogs, which typically overwinter in ponds and reach large sizes before metamorphosing the following spring.

The aquatic life stage is only one part of the equation for pond-breeding amphibians. Most amphibians spend a few weeks or months in the pond and spend the rest of their life on land, which may last one year to a decade or more. If golf courses can serve as suitable habitats for amphibians, as our study in Missouri suggested, then having adequate terrestrial habitat is also essential. But what is suitable terrestrial habitat, and how likely is it to coincide with habitats on golf courses?

Many amphibians are forest-associated, like spotted salamanders (*Ambystoma maculatum*) and American toads (*Bufo americanus*). Many forest-associated amphibians could benefit from golf course ponds located nearby. Other amphibians, like cricket frogs (*Acris crepitans*) or northern leopard frogs (*Rana pipiens*), are grassland-associated. Leopard frogs will roam terrestrial habitats after laying their eggs in ponds, while cricket frogs stay near ponds during warmer months.

Golf courses seem especially suited to facilitating species that use grassland ponds and spend much of the year near the pond. However, golf course managers should not have to study the natural history of local species to determine which habitat characteristics may be most important because many amphibian species can benefit from leaving areas that are out-of-play more natural by not mowing or directly managing them. This type of management not only saves money but can also help amphibians persist at a golf course.

One of the sites where we worked placed signs in unmanaged areas like “Butterfly Wildlife Area” to highlight to golfers the advantages of these spaces. Studies of amphibians in natural

FIGURE 2

Introducing herbivorous grass carp or predatory bluegill sunfish into ponds threatens the survival of many smaller amphibians. Bullfrogs, which overwinter in ponds, also reduce smaller amphibian populations. Cricket frogs reared in enclosures on golf course ponds performed similarly to natural reference ponds.

FIGURE 3

Cricket frogs marked with pink powder were released to track their movements in mown and unmown grass buffers around golf course ponds. Unmown grass areas around ponds favored cricket frog survival due to greater moisture, greater travel distances, better orientation toward ponds and providing food.

systems suggest that amphibians use approximately 500 to 1,000 feet around a pond (8); however, they may be able to use less area, particularly if habitats present fulfill their needs.

A central management practice we associate with golf courses is mowing grass, which is essential for putting greens and areas in play. On some courses, up to 70 percent of the golf course may be out of play and often (or can be) left unmown or less managed, which could be particularly useful to amphibians when these areas are near ponds.

Unmown, grassy areas provide habitat for many beneficial insects, including butterflies, and also critical habitat for amphibians. For grassland species like cricket frogs, unmown fields offer a refuge from the desiccation of the sun and wind, a place to hide from predators, a pathway to disperse and a source for insects on which they feed.

To examine the role of habitat

management on golf courses in Ohio, we worked with three courses that each had at least two ponds, one of which the managers left with an unmown grassy area or “buffer zone” of at least three feet and the other that they mowed up to the edge (4). We put tadpoles of green frogs and cricket frogs in separate enclosures in these ponds and reared them for a few months until cricket frogs metamorphosed and green frogs grew into larger tadpoles (Figure 2).

Cricket frogs are a grassland-associated species that are declining in parts of their range, so if green spaces like golf courses could benefit this frog, it may help maintain populations in some areas. Green frogs, in contrast, are doing well throughout their range and are associated with humans; therefore, they may not be as sensitive to habitat manipulation.

Like our Missouri study, we found that

Continued on page 54

Continued from page 53

tadpoles survived well in golf course ponds (4), suggesting that aquatic habitats on golf courses are sufficient for many amphibian species. We also found that the presence of the buffer zone made a difference for both cricket frogs and green frogs.

The buffer zone increased survival for cricket frogs, suggesting that it filtered out pesticides or fertilizers applied on the golf course. In contrast, green frogs did better without a buffer zone because green frogs are more tolerant of contaminants than cricket frogs (1).

Our results suggest that even partial buffer zones may benefit many species. The management of buffer zones does not have to be an all-or-nothing decision. Because cricket frogs are a more sensitive species, our study suggests that buffer zones could benefit the larval development of these species and be a useful management tool for maintaining local amphibian diversity at golf course ponds (4).

We also examined how buffer zones influenced cricket frog survival in the terrestrial environment. We marked and released all of the cricket frogs reared in our enclosures in golf course ponds and returned to the course in the spring to search for them. However, we found none of the cricket frogs that had been marked (4), which could result because the terrestrial environment on golf courses was insufficient for survival, because individuals moved to other locations away from golf course ponds or because we did not release enough individuals to ensure the likelihood of recapture.

To understand how characteristics of terrestrial habitats could influence juvenile and adult cricket frogs, we also studied cricket frog preferences for mown versus unmown grass in enclosures where they had choices (4). We also released powdered cricket frogs (Figure 3) on golf courses to examine how mown and unmown habitat influenced their movement (5).

First, we found that cricket frogs favored unmown grass over mown

Research Takeaways

- Amphibian communities are most diverse in habitats with temporary ponds because these habitats are nutrient-rich and lack fish, predators that frequently eliminate most species of amphibians.
- Cricket frog (*Acris crepitans*) and green frog (*Rana clamitans*) survival was reduced dramatically when reared in experimental ponds with grass carp (*Ctenopharyngodon idella*) or predatory bluegill sunfish (*Lepomis macrochirus*).
- For grassland species like cricket frogs, unmown fields provide a refuge from the desiccation of the sun and wind, a place to hide from predators, a pathway to disperse and a source for insects on which they prolifically feed.
- Buffer zones of three feet or more around ponds increased the survival of cricket frogs.

grass (4). Subsequent studies indicated that cricket frogs prefer habitats with greater moisture afforded by unmown grass. Furthermore, we also found that cricket frogs released on golf courses in unmown grass traveled further than those released on mown grass and that those released in unmown grass were best able to orient toward a pond (5).

These studies suggest that unmown grass provides a preferred habitat for cricket frogs and could increase their ability to find ponds efficiently. Because unmown grass harbors more food resources, maintains moisture and provides a place to hide from predators, unmown grass is likely helpful for amphibians who would use ponds on golf courses.

Ponds on courses result in survival similar to or greater than natural reference ponds, and unmown buffer zones may benefit the terrestrial survival of many species by providing refuge and food. However, our research suggests not all aquatic and terrestrial habitats are equal. The more closely habitats mimic natural systems, the more likely golf course managers will reap the free rewards of nature.

Aquatic habitats without fish that dry down yearly to every other year during the late summer or early fall are most likely

to support diverse amphibian communities. Harboring diverse communities means protecting more local amphibians and reaping the ecosystem services of amphibians throughout the year.

Unmown grassy edges around ponds help improve the water quality of golf course ponds by filtering out fertilizers and pesticides before reaching the water. Buffer zones around ponds can also provide essential habitat for amphibians during their terrestrial life while they avoid desiccation, hide from predators and search for food.

Looking to nature as a guide for management can serve as a means for keeping all of the needed habitat pieces (3) and restoring ecosystem services in managed areas. With more than half of the world's wetlands lost (9), habitat destruction is a significant issue for aquatic-associated species. When green spaces like golf courses can help mitigate the effects of habitat destruction to some extent, everyone wins. **G**

Adapted by Michael Kenna, Ph.D. from Michelle D. Boone, Ph.D., and Holly J. Puglis, Ph.D.

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For additional information, contact Michelle Boone, Ph.D., Department of Biology, Miami University, at boonemd@miamioh.edu.

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“Aquatic plants are essential to pond ecosystems, but, with mismanagement, can become problematic for golf courses.”

MIKE KENNA, PH.D., *Research Editor*

The why behind water feature management

Several years ago, Jim Skorulski, then a USGA Green Section agronomist, wrote a great article on pond management. He noted that healthy ponds are functional, harmonizing with the landscape, while degraded ones suffer from deteriorated banks, algae blooms and invasive weeds.

The following summarizes some of Skorulski’s management strategies that require understanding pond ecology, design impacts and specific control measures for algae and aquatic plants.

POND ECOLOGY

Ponds are living ecosystems comprised of bacteria, algae, plants, insects, fish and other organisms. Bacteria play a crucial role as decomposers, breaking down organic materials, while algae serve as primary food producers, producing oxygen and supporting aquatic food webs. However, excessive nutrient levels, often from nitrogen and phosphorus, can trigger algal blooms, leading to unsightly water, unpleasant odors and potential harm to aquatic wildlife.

Aquatic plants also contribute to pond ecology, providing habitat, oxygen and sediment filtration. However, invasive species like Eurasian milfoil and Brazilian waterweed often out-compete native plants, disrupting ecosystems. Age, water source, depth and nutrient levels influence pond biology

and appearance.

Older ponds tend to accumulate nutrients and vegetation, while shallow, nutrient-rich ponds are especially prone to algal blooms. Temperature stratification in deeper ponds affects nutrient cycling and oxygen distribution, influencing biological activity and management needs.

DESIGN AND MANAGEMENT IMPACTS

The design and purpose of a water feature significantly affect its management. Irrigation ponds prioritize storage capacity with steep, uniform banks, while multipurpose ponds — used for stormwater retention, habitat, and aesthetics — often feature varied depths and littoral shelves.

Deeper ponds help suppress plants and maintain better water quality by reducing algae proliferation. Ponds fed by springs or wells are generally clearer and nutrient-poor, whereas those recharged by stormwater or effluent water often require more intensive management.

Management begins with an evaluation, including assessing pond size, depth, water source, turbidity and the extent of algae and aquatic plants. Water testing for nutrients and oxygen levels can guide interventions. Developing an integrated management plan involves balancing cultural, mechanical, biological and chemical controls to maintain ecological balance and aesthetics.

MANAGING ALGAE AND AQUATIC PLANTS

Algae in aquatic systems can become problematic during blooms. Management strategies aim to reduce nutrients, especially nitrogen and phosphorus, which fuel algal growth. Methods include water circulation, nutrient inactivation and light reduction using dyes.

Manual removal of algae mats is feasible for small ponds but offers temporary relief. Heavy infestations often require algaecides, such as copper-based or peroxide-based treatments. While effective, these interventions must be part of a broader integrated approach to address underlying nutrient imbalances.

Aquatic plants are essential to pond ecosystems but, with mismanagement, can become problematic for golf courses. Control techniques include:

- Mechanical removal
- Dredging
- Cultural practices
- Biological control
- Chemical herbicides

In summary, effective pond management is an ongoing process requiring regular monitoring and intervention.

Ponds and lakes require tailored management approaches based on design, ecological condition and usage. By integrating environmental knowledge with practical management techniques, facilities can transform their water features from liabilities into valuable assets.

For more information, read Jim Skorulski’s article, *Golf Course Water Features Need Management*, *USGA Green Section Record* Vol. 52.

Mike Kenna, Ph.D., retired director of research, USGA Green Section. Contact him at mpkenna@gmail.com.

The 19th Hole



Rob Dorsch

CGCS // Richter Park GC, Danbury, Conn.

Rob, what can I get you? Either an IPA — Racer 5 from Bear Republic — or a Tito's and soda.



Tell me about Richter Park GC? It's a public golf course in Danbury, Conn. We've got water on 16 of the 18 holes. At one point many years ago it was in the top 25 golf courses in the country. It's a special place — fun, lots of elevation. I've been there 18 years.

Tell me about your family and what do you all do for fun? I've been married 30 years this March. My wife is Misty and we have three girls — Skylar (26), Payton (24) and Savanna is 21. For fun? We travel and drink.

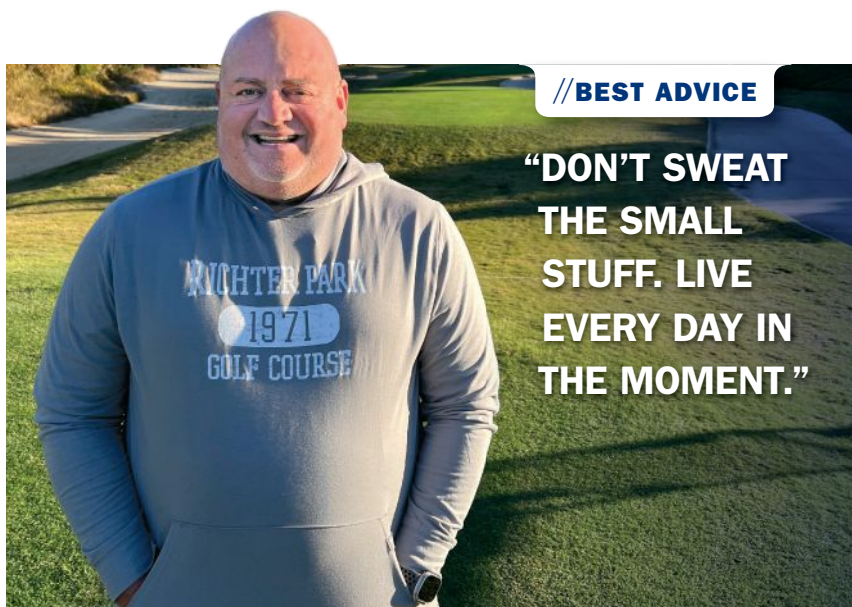
What teams do you root for?

Yankees, Giants and the New York Rangers. The Giants are terrible right now.



Who is your No. 1 favorite golfer and why? Payne Stewart. When I was an assistant superintendent at TPC Scottsdale, he invited me to the birds nest to go celebrate with him when the band got up on stage. I have a hat that was signed by him; it's a Thunderbirds hat.

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What do you think of the Golfdom Summit?

This has been an exceptional experience. Having one-on-one meetings with vendors and getting to learn about and discuss products ... the amount of learning, the amount of networking and friendships ... it's a first-class event. It's exceeded everything I imagined.

If I ever get out to Danbury, Conn., what is one thing we've got to do?

We'll go sit at Rosy Tomorrow's. One of the best bars in the area. And you'll see where my name is enshrined in the bar. I've been going there for a very long time. My youngest daughter worked there, that was her first job.

Do you have a most memorable day at work? I'm a baseball



guy. I was able to meet Mariano Rivera on my golf course. I knew he was playing so I ordered a picture of him exiting the field for the last time. I brought it up to him and he signed it “Exit: Sandman.”

I have a question I don't think I've ever asked, but I've got to ask you: What is the meaning of your tattoo?

I have a matching tattoo with my youngest daughter. We're both cancer survivors. I rang the bell in 2017; she rang the bell this October. 12/21/2017 is mine and 10/16/24 is hers. Ironically, I rang the bell on my wife's birthday, she rang the bell on my nephew's birthday, who is also my godson. I also have a tattoo of baseball stitches covering my port scar. It says, “cancer 0, Big Rob 1.”

As interviewed by Seth Jones, Dec. 12, 2024.

PHOTO OF ROB BY GOLFDOM STAFF; COURTESY, ROSY TOMORROW'S; COURTESY: BEAR REPUBLIC (BEER); WIKI COMMONS (GIANTS LOGO); KEITH ALLISON (MARIANO RIVERA)



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