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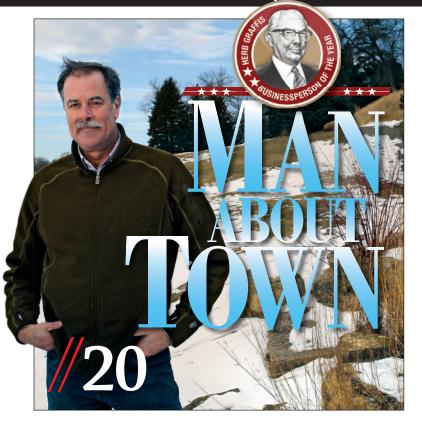


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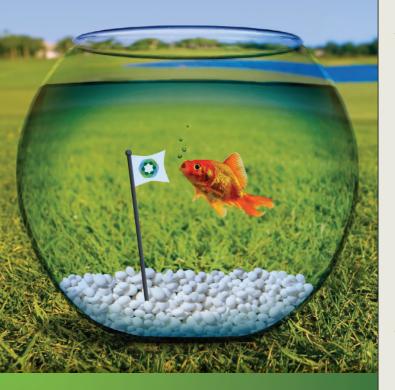
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"Larson was under the impression that I was in town to visit with an advertiser. He probably thought I had heard about his maintenance facility and wanted to get a quick tour before flying home."

SETH JONES, Editor-in-Chief

# With Joe Paterno as my witness

hio State versus Oregon: I had no horse in the first-ever College Football Playoff championship game. Still, being a sports fan, I hoped to watch the game among friends, high-calorie snacks and cold beers. ¶ Instead, I watched it alone in a hotel room in downtown Minneapolis, a Snickers bar my only snack, a bottle of water my only drink.

The January magazine was due to press the next morning, so I was still approving (and in some cases writing) stories as the game was being played, but my focus was on the next day's activity. I landed in Minneapolis that night because I had scheduled a meeting with Bill Larson, CGCS, Town & Country Club, at his maintenance facility in St. Paul, Minn., at 9 a.m. the next day.

It was my hope that Larson would be willing to accept the 2015 Herb Graffis Businessperson of the Year award. If he was unwilling? Panic button.

I arrived at Town & Country Club right on time. Larson beat me to the course by

only a few minutes — black ice caused a big pile-up on his route to the course that morning. My luck was already in high gear, as I left the hotel without a minute to spare, but rolled in right on time.

As I had done the previous three years (Paul Chojnacky in 2012; Wayne Kappelman in 2013; Jim Rattigan in 2014), the winner of the Graffis Award did not know why, exactly, I was there. For Larson, he was under the impression that I was primarily in town to visit with an advertiser. He probably thought I had heard about his state-of-the-art maintenance facility and wanted to get a quick tour before flying home. (Should

you happen to be in his area, Larson says he'd be happy to give all *Golfdom* readers a tour as well; just drop him a line ahead of time.)

Luckily for me, Larson was willing to make plenty of time to show me the shop, talk about his career, grab breakfast, meet the crew and even introduce me to the club president.

"You're asking me questions; I'd rather be asking you questions," Larson told me mid-interview. "How did you get your job? You've got a pretty good gig, yeah? I bet you've seen some great maintenance facilities over the years..."

Yes and yes, but few that

could rival Larson's facility. And no, I wasn't about to let Larson change the topic of conversation — I was there to learn more about him, whether he liked it or not.

It was almost 1 p.m. before I finally let Larson off the hook and told him that the sole reason I was in chilly St. Paul was to interview him. I laid out that I wanted to feature him on the cover of this issue as the 2015 winner of the Graffis award, and I wanted to write a story detailing some of the successes he's had as a superintendent and a project manager over the past 26 years.

"I don't know what to say," was his response. The February cover story hung in the balance. I told him I wanted him to say yes. His eyes misty, he choked out a yes, and we shook hands. He was shocked and I was relieved. My publisher, Pat Roberts, sent me a one-word text: "Well?" I replied, "We have our winner." The life-sized Joe Paterno cutout in Larson's office was the only eyewitness. I'm pretty sure he was smiling.

As you can surmise, that's a recent photo of Larson on the cover. That wasn't taken last summer. That was taken a week after the Ohio State/Oregon game. This all came together rather quickly.

It might be a dangerous way to live, but like Larson says in this month's cover story, "I've learned that risk-takers can be rewarded."

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# CAPILLARY CONCRETE PARTNERS WITH A MAJOR WINNER

Some invest in gold, some in real estate and others in stocks (you know *Golfdom* keeps a close eye on those SAB Miller numbers), but World Golf Hall of Famer and 2013 *Golfdom* Summit keynote speaker Annika Sorenstam has started a partnership with Capillary Concrete.

Sorenstam will help promote the company's bunker liner technology through a partnership created by the purchase of shares.

"We're extremely honored to team with Annika," said Martin Sternberg, CGCS, founder of Capillary Concrete. "Her global brand, personal integrity and experience playing and designing courses around the world make her an ideal spokesperson for our company as we ramp up our visibility in the marketplace."

The system is a homogeneous and pervious bunker liner with capillary properties to keep sand moist and playable. It also promotes improved drainage to ensure sand remains in place after rain.

"Martin has developed a groundbreaking system that is transforming how bunkers are built and maintained," said Sorenstam. **//VIKING WARRIOR OR NEW BOSS?** 

## TROGELE'S TAKE OVER

Ulrich Trogele, Ph.D., might sound like a professor of Norse mythology, but Bob, as he goes by, is the new chief operating officer (COO) and executive vice president of Amvac Chemical Corp., a subsidiary of the American Vanguard Corp.

Trogele brings 28 years of experience in the agribusiness sectors of agrichemicals, biotechnology and plant nutrition. He most recently served as President-Asia Pacific at FMC Corp. In the position with Amvac, Trogele will focus on growing the business across multiple product lines and geographies. As COO, he will oversee sales, marketing and business development on a global basis.

#### **//NEW KID IN TOWN**

### **QUALI-PRO ADDS**TO SOUTHWEST

Control Solutions Inc. (CSI) has named Jim Davis the Southwest area manager for their Quali-Pro division.

Davis has 35 years of turf and ornamental experience, with work in distribution, sales and management in Arizona and California. He has been heavily involved with the California GCSA and San Diego GCSA. And as a licensed California pest control adviser, Davis might be your best option if you have a gopher problem.

"With Jim's professionalism, competitive spirit and drive, I have no doubt he will quickly grow CSI's business," said Rick Grant, Quali-Pro Business Director.

//FROM THE LADIES' TEES

#### WGF LAUNCHES 'GOLF FOR HER'

World Golf Foundation, a non-profit organization aimed at developing and supporting initiatives that help grow the game of golf, has launched a new Website designed to increase women's golf participation, GolfForHer.com.

The Website was unveiled at the PGA Merchandise Show, and includes contributions from the LPGA, the PGA of America, The PGA Tour, the USGA, the Executive Women's Golf Association and Golf Digest.

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#### NorCal GCSA honors members

The GCSA of Northern California (GCSANC) named their annual award winners recently.

Kevin Breen, CGCS, of La Rinconada CC, Los Gatos, was named Superintendent of the Year. The George Santana Distinguished Service award, given to a member for long-standing commitment to the GCSANC, went to former president Gary K. Carls, CGCS, president of the Oakland Turfgrass Education Initiative.

The GCSANC recognized two courses for Turfgrass Excellence. Superintendent Thomas Doyle and director

Coby Byers of Turf Star Inc. was presented the Bert Graves Affiliate Merit award, while Barbara Mikel, a former GCSANC manager who retired last year after 24 years with the association, won the 2015 President's Award.

of agronomy Michael Garvale, CGCS, of Callippe Preserve GC, a municipal facility in Pleasanton, won the Public Category. The Private Category went to superintendent Sean Tully and director of ground maintenance David Sexton, CGCS, of the Meadow Club in Fairfax.



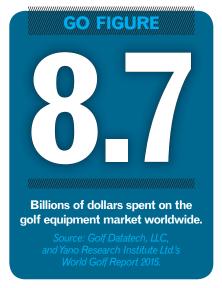
#### MAYOR EDUARDO PAES

MAYOR OF RIO DE JANEIRO

To Bloomberg reporter David Biller, on what will happen to the 2016 Olympic course if the city cannot find a private operator to maintain the facilities after the games are finished.

"I would never spend city money taking care of a golf course."





#### //GRAFFIS ALUMNI

#### **RATTIGAN OFF TO** JUPITER... FLORIDA

Jim Rattigan, director of operations at Schuylkill Country Club in Orwigsburg,



Pa., and Golfdom's 2014 Herb Graffis **Businessperson of the** Year award winner, has accepted a newly created position with the Plant Food Co. as its Southeast regional director.

Jim Rattigan In this position,

Rattigan, who will be based out of Jupiter, Fla., will focus on introducing the northeastern-based brand to superintendents in Florida.

"I am excited to get these great products to superintendents where (they are) currently unavailable," said Rattigan. "I would like to extend a big thank you to Seth Jones and Golfdom magazine. The acknowledgment from the Herb Graffis award was a confidence booster in the pursuit of my professional career."

#### ABOUT THE COVER

William Larson, CGCS, was photographed in late January at Town & Country Club in St. Paul, Minn., by photographer Judy Griesedieck. "He was a little nervous because he's a humble man," Griesedieck



Gelfdon



"I speak with superintendents almost daily who tell me they are currently making less than they did a few years ago. Many have fewer benefits and feel less secure in their jobs."

MARK WOODWARD, Contributing Editor

## Are we still on track?

uring my direct involvement in the leadership of GCSAA, whether it was serving on committees, serving for seven years on the Board of Directors, or my two years as CEO of the association, we had many conversations about raising the status of the superintendent profession. I believe in many cases we made great strides, and in some cases forward progress actually happened. ¶ During these discussions the goal always was to make sure owners and influential golfers understood the importance of the superintendent's role and that superintendents are a key to the success of the facility.

I believe this concept still remains a major focus of the association, which is as it should be. But I wonder if we're losing some of the momentum we gained in earlier years.

As I've mentioned before, I visit a large number of golf courses and interact with many superintendents. A majority of the people I talk to agree that most owners and influential golfers realize that the golf course itself is the largest and most valuable asset of a golf facility. Like me, however, they don't believe that compensation and recognition is what it could be for superintendents.

I've had the privilege to manage several golf facilities that don't have a clubhouse, swimming pool, restaurant or social component, yet are extremely successful golf courses. The clientele comes to the facility for one reason — the golf course. This is why people in these settings understand that the golf course is the engine that drives the success of the facility. We all know that the one person directly involved in the condition of the golf course is the superintendent. So all the work that went into making people recognize this and thus raise the status of the superintendent was well worth

it and proved to be successful.

This early success even translated into some higher salaries. Past GCSAA Compensation and Benefit Surveys have verified this theory.

Herein lays my concern and my question: Are we still on track? Are salaries still going up? Really? Are superintendents still recognized universally as a key to the success of the facility?

These questions are not asked to be controversial, but rather from a deep concern about whether we're still making progress in this area.

I speak with superintendents almost daily who tell me they are currently mak-

ing less than they did a few years ago. Many have fewer benefits and feel less secure in their jobs. Additionally, I hear stories regularly from superintendents who are in the final years of their careers and unceremoniously get terminated and replaced with superintendents making a far lower salary than the previous long-tenured, experienced superintendent.

I fully understand that there are still superintendents out there making relatively high salaries, and their clubs also understand the key role they play at their facilities. But overall, something is telling me that we might be going backward in terms of superintendent recognition and income.

There are a large number of superintendents who are still being affected drastically by the economic downturn that hit our industry in 2008-2012 and are not making any more money than they were several years ago. Some are even making far less. Still others are unemployed because they were making "too much" money at their clubs in the first place.

So I ask, are we still making the headway that we made a few years ago and are we still on track?

My gut is telling me we're not.

Mark Woodward is a senior vice president for OB Sports, principal of Damarco Golf, president of Mark Woodward and Associates and a contributing editor for *Golfdom*. He can be reached at mwoodward@ obsports.com.



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#### I'm Just Saying No BRAG, JUST FACT



"Can you imagine your club without a golf operations department? All hell would break out every day. It'd be fun to watch for a couple of days, but then you'd get the call to fix it."

STEVEN WRIGHT, CGCS, director of golf course/ landscape operations, Boca West CC, Boca Raton, Fla.

## Golf's BIG, BIGGER and BIGGEST assets

et's talk about assets, shall we? No, not the J-Lo or Kardashian type. I mean the club's assets. ¶ What is the largest asset at your place of employment? ¶ I'm certain that all of us turf janitors in golf course management land would agree the club's/course's largest asset is the golf course itself. That's the drawing card, meeting place, mission statement, largest expense, yet largest revenue maker. Important for property values/taxes, acreage, etc.

I'm preaching to the choir here. We live and die by all that happens on/to/for the club/course. So do many of our members or golfers. It's their focal point for recreation and relaxation. Championships are won and lost, hole-in-ones, chip-ins and too many memories to count.

I hope you read the October 2014 issue of Golfdom with Seth Jones' interview with Gil Hanse. Hanse happens to be one of the hottest names in golf course architecture these days. Good interview, but what caught my attention (and yes, it was in boldface) was Hanse's comments on course conditioning: "At the end of the day only about 5 to 10 percent of the golfers really appreciate the design. But 99 percent of golfers appreciate

good turf conditions."

'Nuff said, right turfheads?

Of course the club/course is our livelihood. It's how we support our families. Most of us spend a majority of our waking hours there. The same goes for our assistants and support staff. Their dedication and efforts are part of the success stories of any club/ course, superintendent and membership. No one can deny that the course makes a club.

Another contender for the largest asset of a course is the clubhouse and its multiple departments. Have you inquired about the value of that building lately? Some clubs — not all — have bigger food and beverage operations than golf course maintenance. You know members have to eat

breakfast, lunch and dinner.

Want to talk about memories? Clubhouses host parties, weddings, fundraisers and post-golf events. Bet you can't have a member/guest without a clubhouse.

Face it — to some members the clubhouse operation is far more important than the golf course. That's OK, to each his own, and besdies, every department should have the sense of pride of ownership that many superintendents

I believe an argument (albeit a smaller one) can be made that the golf shop/golf operations is the largest asset of a club or course. Organized golf as we know it could not happen without a capable staff running tee times, organizing and scoring events, managing

cash flow and maintaining golf car fleets and caddies. Some club's/course's merchandising is a monumental undertaking all by itself.

Think about growing the game — are you going to do that? Can accounting drop what they're working on to help Mrs. Lexicon with her chipping?

Can you imagine your club/course without a golf operations department? I'd bet that all hell would break out every day. Sure, it would be fun to watch for a couple of days. But then it would get old and you'd get the call to fix it. Eventually no one would play your course; they'd drop their membership and go elsewhere.

So what is the largest asset at your place of employment?

I maintain that the largest asset at any club is the membership or the golfers. Sure, it takes qualified people in several key departments to run a successful club or course. But all this means nothing without members or golfers.

What's a private club without members? Closed. What's a daily fee, semi-private, resort or public golf course without golfers? Closed.

We like to brag about our members here, because without them we are nothing. Here at Boca West we're not in maintenance, food and beverage or even the pro shop.

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Steven Wright, CGCS, is director of golf course/landscape operations at Boca West CC in Boca Raton, Fla. He can be reached at swright@bocawestcc.org or followed at @wrightsteve19.





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"In fact, 50 geese can produce 2.5 tons of excrement per year, hence their scientific name, *Bagus decrapii.*"

**MATT NEFF,** assistant superintendent, Wedgewood G&CC, Powell, Ohio

## Oh, Canada

s Americans, we're tremendously fortunate to have such great neighbors (or should I say *neighbours*) to the north. Not only do they have one of the coolest flags in the world, they have shared many of their finest cultural achievements with us. Off the top of my head, we can thank them for hockey, maple syrup and the cinematic classic, *Strange Brew*.

On the other hand, they are unfortunately responsible for sending us Arctic air masses and Justin Bieber. But worst of all, and that's saying something when you consider the latter of the first two, they have also shared their Canada geese with us.

Author and conservationist Aldo Leopold said, "One swallow does not make a summer, but one skein of geese, cleaving the murk of March thaw, is the spring." Honestly, I'm not totally sure what "skein" or "cleaving the murk of March thaw" means, but I can tell you that seeing a flock of geese descending onto the golf course does not elicit the same poetic thoughts for me as it appar-

ently did for Leopold. I absolutely can't stand them.

The only thing that "one skein of geese" means to me is one skein's worth of goose poop, most likely on or near a green and virtually never somewhere out of sight. In fact, 50 geese can produce 2.5 tons of excrement per year, hence their scientific name, Bagus decrapii. Cleaning up their prodigious mess is one of those jobs during which you think "I'm really happy to still be paying the student loans that financed the degree which is allowing me to do this right now."

It's hard to believe that in the early 20th century, Canada geese populations were so low that they were actually a protected species and were even reintroduced in some areas where populations had significantly decreased. A big round of applause to the policy makers behind that decision since they've now rebounded to plague-like populations.

They're basically the *Poa* annua of the animal kingdom, virtually ubiquitous and not easy to get rid of.
They either live in or migrate through all of the 48 contiguous states and all 10 Canadian provinces and three territories.

They have literally zero redeeming qualities, especially in the golf course environment. As herbivores, they don't eat bugs or any other pests, nor do they do anything that would be con-

sidered especially beneficial. They basically just hang out on the course all day, honking and hissing at people when they're not too busy picking at a green or relieving themselves all over an approach.

For an encore, they'll leave the course right around the time you decide to head home and will end up blocking traffic for 10 minutes when they decide they need to walk down the middle of the street. This situation is occasionally made exponentially worse if there happens to be a "goose whisperer" on the scene. You know what I'm talking about. The passing motorist, frequently driving a Prius or a Subaru, who feels it is their moral responsibility to exit their vehicle in the middle of the road and shepherd the geese to safety.

While many people employ various control options including noise harassment, barriers, lasers, egg/nest disruption and dogs, it's no secret that many of them are nothing more than a temporary solution. So like Bieber, I guess we just have to deal with them and hope they eventually go away.

If you're looking for a way to retire with more money than you'll ever need, developing an effective goose deterrent system might just be your ticket. Just don't expect the goose whisperer to be an investor.

Matt Neff (mneff4@yahoo.com) is assistant superintendent at Wedgewood G&CC in Powell, Ohio.





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#### Nick Klinkhammer

#### **ASSISTANT SUPERINTENDENT**

Woodhill Country Club, Wayzata, Minn.

Woodhill Country Club rests next to Lake Minnetoka in Wayzata, Minn., 15 miles from the Twin Cities. The private course, designed by Donald Ross, was completed in 1917 and is home to one of the top assistant superintendents in the industry. Nick Klinkhammer spends his days on Woodhill's 18 holes but has experience at some of the most well-known courses in the U.S., with internships at Whistling Straits, Pinehurst Resort and Augusta National. When we talked to Klinkhammer he was working his first assistant superintendent job at Victoria National Golf Club in Newburgh, Ind. Last December he made the move back home to Minnesota and Woodhill CC.

#### WHERE DID YOU STUDY TURFGRASS SCIENCE? | went

to school at the University of Minnesota, Twin Cities. Not the most well-respected program compared to Penn State or Michigan State, but I'll just put it this way; we work our butts off. They are really starting to make a name for themselves. It's kind of exciting. I'm excited to promote the University of Minnesota.

WHY DID YOU CHOOSE THIS PROFESSION? I love the game of golf. I love being on golf courses. I originally wanted to be a PGA professional and work for the dark side, but I had an uncle who was on the dark side and he said, 'No, you want to work for the golf course superintendent.' When I got a job on a local golf course, I was like, 'Wow!' This is working with my hands, being on a mower, mowing

and seeing what kind of product I produce each day. Creating a natural beauty.

It was an easy decision. Once I got to college, once I started to dive in and see what was all there, I just ran with it.

who is your mentor? The guy I worked for, Kyle Callahan (superintendent, Victoria National). He is very intense, very outgoing, very goal-driven. He's not going to wait around for you. You have to be at the top of your game every single day. I learned more with him in five months than I had in the past eight years.

WHENYOU GOT INTO THE INDUSTRY, WERE THERE ANY BIG SURPRISES? I found out that you are going to work a lot more hours, you're going to have to put a lot more passion in, which is fine

with me. I work an average of 14 hours a day during the summer. It's just fine. I got used to it. If you want to have success, you get used to it. I love every minute of it.

#### ANY THOUGHTS ON BEING AN ASSISTANT SUPERINTENDENT

**RIGHT NOW?** It's tough. Not only are you trying to please your boss, but you are also trying to set yourself up for the future. It's one of those things where you've got to put the time in and sacrifice.

#### WHERE DO YOU SEE YOURSELF

IN 10 YEARS? Right now, my goal in 10 years is to be the best I can be. Hopefully be a top 100 superintendent and on my way to achieving even more goals. I have worked for top 100 golf courses and I kind of understand what it takes. So in 10 years I hope that I am right there with them.

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FROM THE ARCHIVE

Most golf courses, no matter the size, keep a fleet of golf cars available to their members. In the 1950s and '60s they were a luxury that some courses could not afford, let alone profit from. ¶ In 1958, Doylestown (Pa.) Country Club invested in their first two cars and saw an increase in the amount of rounds played and revenue. The cars allowed members who could not walk nine or 18 holes to play again, and pairs were paying what would be more than \$55 today to use them. When this article was printed in the April 1961 issue of Golfdom, the income brought in from the cars allowed the club of 200 golfers to expand their fleet to five. ¶ New ideas or technologies can make a difference on any golf course; maybe the next golf car will be seen at this year's Golf Industry Show. For now, enjoy this month's Golfdom Files and to read the full version of this article, visit golfdom.com/category/exclusive.

#### Small fleet for a small club

hree summers ago two golf cars began making occasional trips up "Cardiac Hill" at the Doylestown Country Club course near Philadelphia. Today, five cars make this trip regularly. Doylestown has found that the cars pay off.

They pay the pro, Charlie Schneider, Jr., for watching over them. They have brought new members into the club and revived the interest of some persons who had given up golf.

The actual statistics of the Doylestown CC's use of cars may be interesting to clubs that are not yet using them — or to clubs that are not making a profit from their vehicles.

Doylestown is a nine-hole course. The No. 2 hole is a long gradual slope that has been nicknamed Cardiac Hill by members. Players completing an 18-hole circuit must climb this formidable slope twice. The club has 200 golfers. In 1958 Doylestown bought its first two cars, Cushman Golfsters. These units paid for themselves during the first year's operation and also brought in enough

additional funds to buy another car in 1959. The 1959 income from three vehicles made it possible for Doylestown to purchase two more Golfsters to bring the present total to five. All cars were purchased entirely from money made from rentals.

The cars are owned by the club. A percentage of the rental income is paid to Schneider for taking care of the vehicles.

Schneider estimates that during

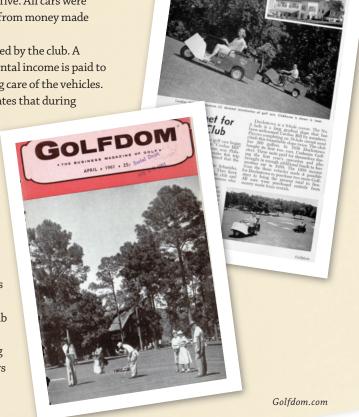
a six-day week his cars are used an average of 35 18-hole rounds. Since the rental rate is \$7.00 for 18 holes for two people, this means that the vehicles produce about \$245.00 gross income per week. The Doylestown club limits the use of vehicles by permitting only club owned cars

on the course. Anyone can use a car, however, as long as the course is playable.

Schneider reports that maintenance of the Golfsters is practically nil. At least two years of operation are realized from batteries and in some case, three. The cars can be used up to 45 holes before recharging is necessary.

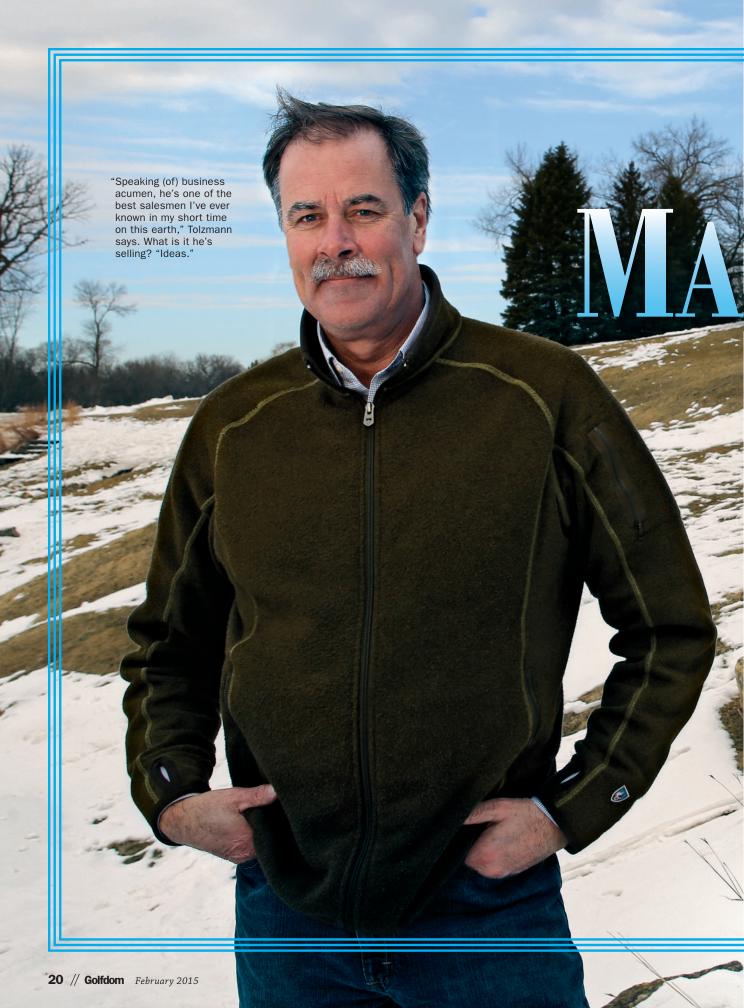
The Doylestown pro is another who subscribes to the idea that cars are necessary conveniences on a golf course. He sums up his views by saying: "Fishermen don't row very much anymore. They use outboards."

Possibly the best thing about the golf car operation at Doylestown is that it proves even small clubs can profitably run small fleets on a pay-as-you-go purchasing agreement.



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# MABOUT LOWN

William Larson, CGCS, has spent the last 26 years improving Town & Country Club one project at a time... and saving the club untold thousands along the way.

#### **BY SETH JONES**

he inspiration for the maintenance facility came from numerous site visits over the years — literally hundreds. The above-head hoses in each bay area is like what they saw at Augusta National. The maximization of space comes from studying the shop at St. Andrews. Cypress Point was a sentimental inspiration, another course that gets it done with not a lot of space.

The office furniture? Probably inspired by Pine Valley, maybe, or Pebble Beach?

...Sorry. That's straight off Craigslist.

"We had a budget to buy furniture, but I'd lay in bed at night and find three chairs on Craigslist for \$100," says William Larson, CGCS. "I'm programmed to save money. It's my upbringing — we never had money. Our first shop was a semi-truck trailer. I don't forget those days."

Looking at the state-of-the-art facility from which Town & Country Club in St. Paul, Minn., currently operates, it's hard to imagine Larson's crew working from a semi-truck trailer. This facility is so pristine, visitors have parked there, then started changing their shoes in the parking lot, thinking they were at the clubhouse. Members rent the high-tech break room for events — yes, the maintenance team's break room — to show off to their friends.

It isn't a multi-million dollar maintenance budget that Larson has. It just looks that way.

#### **Best in state**

For readers outside Minnesota, and maybe the Midwest, allow us to introduce Mr. Bill Larson, CGCS, superintendent at Town & Country Club, and the 2015 Herb Graffis Businessperson of the Year award winner.

Now in its fourth year, the Graffis Award is given in honor of *Golfdom's* founder, World Golf Hall of Fame member Herb Graffis. When Graffis founded the magazine in 1927, he did it with the mindset that golf is more than a game, it's also a business.

The Graffis award isn't a good guy award. It's a good businessman award. But it turns out Larson is both.

Excruciatingly humble (he asked not to be featured on the cover without his crew; his club president talked him out of it), sharply funny (ask him about his last trip to the Masters) and endearingly sentimental (he became misty-eyed when he learned he was the 2015 winner of the Graffis Award), Larson is equally admired, feared and respected by hundreds in the turf maintenance business.

"When we took on the bunker project, I talked to Continued on page 22 several greens chairs and presidents of other private clubs," says Devin Rice, president of Town & Country. "They all had one thing in common: they all knew Bill Larson, and they all said he was one of the best in the state."

Larson didn't win the Graffis award because of the cutting-edge maintenance facility he helped design. He didn't win for his ability to save Town & Country major dollars every season since he joined the club in 1989. And he didn't win for hiring workers with special needs, for being a liaison with the neighborhood dog walkers, or even for giving the neighborhood lawyer a ride to the bus stop twice a week.

He won the Graffis award because over the last 26 years, he has been the man leading the way at Town & Country Club, Minnesota's oldest golf course.

"He's done a wonderful job of improving Town & Country while being very sensitive to cost containment," says Scott Kinkead, execu-

Larson and Piper, his Golden Retriever.





"Bill is a hard worker. He's a St. Paul guy at a St. Paul club," says Linda Carroll, 2007 president of the Club Managers Association of America and former general manager of White Bear Yacht Club, now retired. "He knows what he wants and he's willing to work very hard at it, and that shows on the course."

tive vice president of Turfco, who nominated Larson and also worked for him when he was still in high school. "He has a multi-faceted skill set. From using the knowledge of other superintendents for his maintenance facility, to mentoring a quality staff over the years... and he does it in a humble, straightforward way."

#### Mr. Fix-It

Forget about Town & Country's maintenance facility, which, frankly, is the envy of most courses out there. Instead, think of the way the course paid for such a facility: by pinching pennies over the last 30 years by keeping projects in-house.

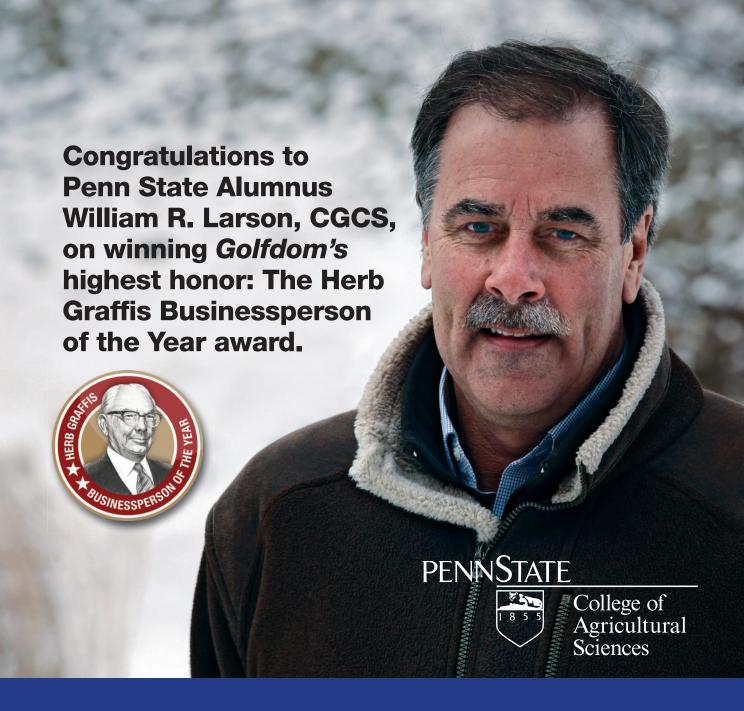
There was a sea change at Town & Country that took place around the same time Larson took the helm of maintenance at the course.

"It used to be, if we had to put in steps, we'd farm it out to a local handyman," says George Carroll, former general manager of Town & Country, and the man who hired Larson all those years ago.

The former GM at Interlachen CC in Edina, Minn., now retired, Carroll, a past president of the Club Managers Association of America,

Continued on page 24

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#### **WORKING SMARTER** WITH A SMART BOARD

Borrowing an idea from his boys' school, T&CC's job board goes high-tech.

Bill Larson and his wife, Gayle, have two adopted sons: Kyle, a 6th grader, and Jake, a 5th grader.

It was when Larson walked into Kyle's kindergarten classroom for the first time that he saw another tool he knew could be invaluable to his maintenance facility: a smart board.

"I asked the teacher what it was, and she showed me how it worked... I was stunned." Larson says.

Every morning, assistant superintendent Erik Tolzmann and second assistant Tyler Rose prepare the day's duties on the computer. They print it off and hand that sheet to Larson for approval. Then, after the coffee is made, they turn the smart board on so they can show the guys the workload for the day.

The interactive computer screen displayed on the wall keeps the young crew's attention, Rose says. Also useful, each day's work log is saved, allowing them to calculate exactly how much they spent on, say, mowing fairways.

Another benefit: Google Earth.

"Say someone on the crew isn't sure about the bunker I'm talking about," Tolzmann (pictured above) says. "I can bring this (course map) up and show him the exact bunker I'm referring to."

Another benefit: no chalk dust or chicken

"My handwriting is lousy," Tolzmann laughs. "With this, the guys don't have to try to decipher my writing."

Continued from page 22

says Larson and his team started taking on more projects out of sheer boredom. "The golf course got so easy for him. It was always immaculate, not just tee to green, but the whole property was perfect. So he always wanted to do something else."

Keeping projects in-house has become a way of life for Larson, a hard-working Penn State grad who is proud to say he has night-watered four different golf courses in his career. Though he might shy away from the spotlight and has a disdain for having his picture taken, he doesn't shy away from work.

"I'm a superintendent at a private club, and I wear jeans to work. In the summer I wear cargo shorts," Larson says. "I'm not afraid to work, grab a shovel or jump on a tractor."

Larson says his work ethic came from when he was a child. His father passed away when he was only six. His mom remarried five years later to a man who owned a golf course and eventually built two more.

"I didn't have any choice... I had to work every day," Larson says. "I didn't get the luxury of days off."

#### Research nut

A complete list of projects completed by Larson and his team of handymen over the last 26 years would take too much space. A new wine cellar, a renovated poker room, cart path removal, five different buildings, relocating the tennis courts three times...

But the daddy of all the projects taken on by Larson and his team was recent, and started out as a bunker renovation — turning 60 bunkers into 45. That project grew as it unfolded.

The budget started at \$300,000, but Larson convinced his bosses mid-project that it was the right time to invest another \$100,000 and also rebuild 12 tee boxes, install





"When I was on the national board for the Club Managers and I'd travel for tournaments, I'd take Bill with me," says George Carroll, Larson's former boss. "I think of all the maintenance buildings we saw... we put them all together at Town & Country. It's one of the best facilities I've ever seen, outside two or three, in the world."

new irrigation, build a retaining wall, reclaim some land and remove/relocate some unsightly cart paths.

"He managed the project exclusively on his own, with his own staff. He undoubtedly saved us a few hundred thousand," Rice says. "The original \$300,000 probably wouldn't have even gotten the bunkers done. He has such a tremendous business savvy about him... he's always thinking."

Erik Tolzmann, Larson's assistant superintendent, chose working at Town & Country Club over another course because he knew he wanted to learn from Larson.

"I think (saving money) is at the forefront of his mind everyday, which is helpful for us from a learning standpoint as assistant superintendents," Tolzmann says. "We can see how he manages things here, not only to provide top-notch playing conditions but do it as fiscally responsible as possible. Saving \$100 here and \$100 there all adds up throughout the year."

"It was a 2-year project, but we got it done in 18 months," Larson says. "We did all the irrigation work, we did everything. We had a great team, from my assistants, to the high school kids who worked two days a week. We were a lean, mean, fighting machine by the time we got done — everyone had a role, and they all did it the best they could."

Dale Caldwell, superintendent at Minneapolis GC and Larson's mentor, says Bill is an interesting guy to watch work.

"He's a very convincing guy and all his ideas have merit," Caldwell says. "It's not all Bill on his own... he utilizes contractors, he utilizes architects, he just goes about it in a different way."

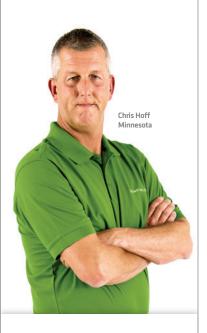
For example, Larson hired a shaper, Dan Bieganek, who worked for Rees Jones for years, but wanted to move back to Minneapolis. He bought a used bulldozer for Bieganek, let him get to work, then sold the bulldozer for a profit once the bunker project was complete.

"I'm a research nut, I research every-Continued on page 27

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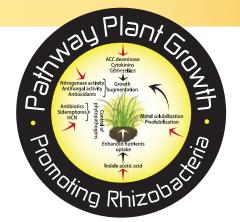
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Microbes **Matter**   $Continued\ from\ page\ 25$ 

thing," Larson says. "I'd lay in bed at night with insomnia, researching bulldozers. It was a risky purchase, but I've learned that risk-takers can be rewarded."

Jeff Markow, CGCS at Cypress Point Club in Pebble Beach, Calif., met Larson when they became roommates at Penn State in 1983. Markow says he knew back then that Larson had what it would take to make it in the industry.

"Bill is an outstanding superintendent with attention to detail and a hands-on approach. He rolls up his sleeves and saves the course a tremendous amount of money," Markow says. "That's where he excels. He'll teach himself contracts, negotiations, whatever it takes to get the biggest bang for his buck."

Larson is a handy guy and he says he's hired handy guys. They recently built new on-course bathrooms. The bid from an outside contractor was \$280,000. Larson and his team built them for \$120,000.

"I like to stay busy, I like to work and I like to improve," Larson says.

#### Value of the shop

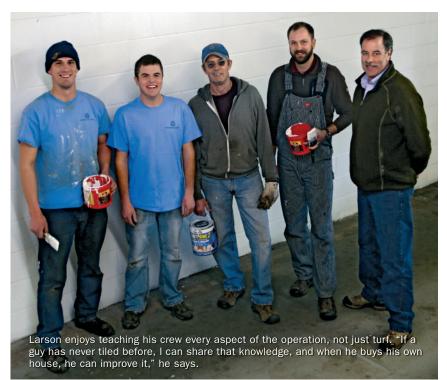
The walls are 3-inch concrete on the inside and outside, with 6 inches of insulation in the middle. That's useful on a cold Minnesota day like today, when it's minus-16 degrees outside.

An employee can walk from one end of the shop to the other without having to set foot outside. That's important in the winter. Just as important is the amount of natural light that comes in during the summer months. Or the energy efficient lights. The city applauded their environmental wash station, which keeps all clippings on-site and gets consumed by microbes.

And Larson insists the entire place remain spotless.

"Bill definitely makes sure we know how valuable this shop is," Tolzmann says. "I've heard Bill say it a thousand times: See the condition of someone's shop, and 90-percent of the time that's reflective of their golf course. We've taken that to heart."

Town & Country's soft-spoken me-Continued on page 29

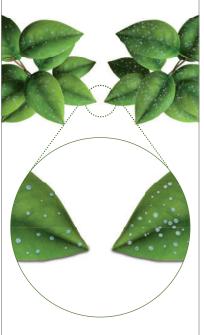


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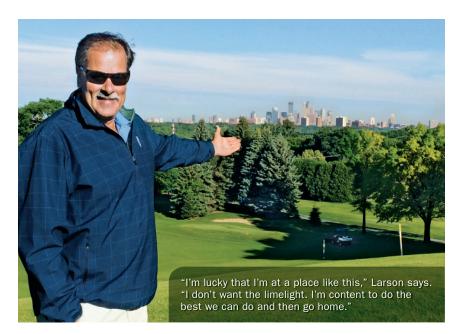
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Continued from page 27

chanic, Mike Romundstad, came with Larson from Hudson CC 26 years ago. He remembers all the different shops with a fond nostalgia. His two favorite amenities of the new shop are the above-head, airoperated hydraulic fluid and oil hoses, and the two lifts. The heated floor is nice, too.

"We could work out of a garage if we needed to... the people who do the work, that's what's needed," Romundstad says. "But a lot of courses don't have this. This is state of the art here."

#### Friendly neighbors

As Larson rolls his truck down the hill from his maintenance shop toward the clubhouse, he stops and rolls down his window. A dog walker approaches and greets Larson by name. She's not a member, just a friendly neighbor.

There's another neighbor, a lawyer, who seems to always be running late to work. So Larson will pick him up and give him a ride to the bus stop. And then there's the young man with special needs who works maintaining the clubhouse grounds. Larson is excited that he's now living on his own, which was his goal.

Larson strolls through the clubhouse

kitchen, and shouts names as he walks by. He takes a moment to chat with one waitress who has been an employee of the club for 35 years.

Larson is more than the superintendent. He's also the goodwill ambassador.

In 26 years, Larson has seen a lot of people come and go, including five different general managers and four golf pros. What does he attribute his success to? Simple. Hard work.

"Work hard and good things will happen. You have to have a passion," Larson says. "Some of these new guys say they have a passion. There's a difference between having passion and saying you have passion."

His passion is reflected by the success of the club.

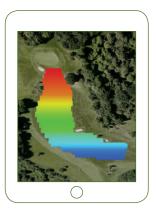
"We have a general manager, a superintendent, a golf pro... but really, Bill is the true leader of the club," T&CC president Rice says. "Obviously, he works for the general manager, but he's the senior manager here. He's part and parcel to the success of the club as a whole — not just the turf side."

It seems clear. Bill Larson isn't just the man about Town & Country Club. He's simply... the man. **G** 

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## 5 can't-miss **GIS** moments

We've been told by HR that we can't spend the entire time on the River Walk. So in the meantime, these five events sound pretty nifty. BY GRANT B. GANNON

The 2015 Golf Industry Show (GIS) heads to San Antonio Saturday, Feb. 21 to Thursday, Feb. 26 and incorporates competition, education and plenty of networking. Teeing off the show is the GCSAA Golf Championship and provides probably the coolest reward of the week: Any hole-in-one will earn the golfer a prize package that includes a 2015 Mid-Duty Toro Workman.

That hole-in-one would be a must-see event but, there is no guaranteeing it will happen. After looking over the calendar of events, *Golfdom* has picked out our top five must-attend events of the 2015 GIS.

ers like, "The weather outside sucks, it sucks so much it's creating a vortex... a polar vortex." (YYYYYEAAAAAHHHHH!!!)

Zero Waste Golf — A Low-Cost Model to Improve Your Facility (1 p.m. to 5 p.m., Tuesday, Feb. 24, Room 006A)

As the Bruce Springsteen song goes, "From small things, mama, big things one day come." This seminar fits Springsteen's mantra; smaller changes now can lead to bigger ones down the road.

Josh Heptig, superintendent at Dairy Creek GC in San Luis Continued on page 32

**CSI Turf: What Killed My Grass?** Surviving the Next Polar Vortex and **Other Weather Anomalies** 

Did last year's Polar Vortex cause you to lose your grass and almost your job? Moderated by John Sorochan, Ph.D., the panel will be discussing how to prepare or recover from weather extremes.

Presenting during the session with Sorochan are Sara Croke, president of Weather or Not, Inc.; Kevin Frank, Ph.D., Michigan State; Brian Schweihofer, superintendent, Franklin Hills CC, Franklin, Mich.; and Jim Thomas, CGCS, director of maintenance, TPC Southwind, Memphis, Tenn.

Hopefully "CSI Miami's" Horatio Caine shows up and gives one of his famous sunglasses one-lin-

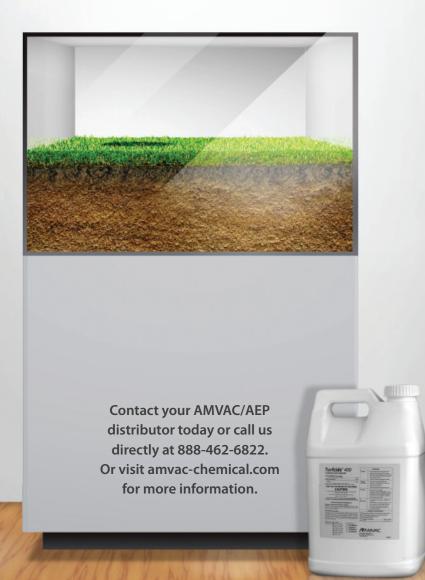
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Continued from page 30

Obispo, Calif., and Andrew J. Staples, president of Golf Resources Group, will be taking you through low- to no-cost

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**Andrew Staples** 

of your course via Google Earth or another source so it can be analyzed... and then you'll be told what you're doing wrong.

BASF's Beers, Banter and Brats (1:30 p.m. and 3 p.m., Wednesday, Feb. 25, booth 4111)

Four of Seth's favorite things will be available simultaneously at the BASF booth: beers, banter, brats and himself.

Moderated by Golfdom EIC Seth Jones, guest speakers include Kevin Robinson, CGCS at Pinehurst Resort; Joe Kennedy, CGCS at Vanderbilt Legends Club, John Thompson, Sycamore Hills GC, along with BASF's Strategic Account Manager Brian Thompson, among others. Seth will be slinging beers while also having the group discuss their challenges, what they're expecting for the 2015 golf season and some recent successes they've witnessed.

The 1:30 p.m. session is dedicated to Northern courses, and the 3 p.m. session is dedicated to Southern courses.

Closing Celebration (5 p.m. to 7 p.m., Thursday, Feb. 26, Lila Cockrell Theatre)

Every ice cream sundae needs a cherry on top and every GIS needs a closing ceremony. This year's proverbial cherry will not disappoint.

Start at 5:30 p.m. with a few drinks during the reception before the program. Watch out for the spit-takes during the Continued on page 34

## Passing the gavel

Keith Ihms, CGCS, discusses his year as GCSAA's 78th president with GCSAA's 53rd president, Dennis Lyon, CGCS-Ret., and looks ahead to the future of the superintendent profession and the game of golf.

#### BY DENNIS LYON

**Dennis Lyon:** Tell us about your travels this year. Where did you go? What were some of the important meetings and activities in which you were involved?

Keith Ihms: Travel has been challenging but amazing. I have been everywhere from Beijing, China, to Monterey, Calif., and many places in between. I spent three days at



the BIGGA Conference in England without luggage. I learned my body style doesn't conform to the European clothing idea. I had a great opportunity while in China to spend some oneon-one time with Gary Player, who was also part of an event.

Some of the most productive and valuable meetings during my year were with the USGA Executive Committee and with the PGA officers. We worked with the USGA on promotion of sustainable golf, and with the PGA on ways our associations can grow the game and make it more enjoyable.

Lyon: Golf has had some difficult times since the 2008 economic downturn. What are your thoughts on the current status of golf in the U.S., where is the business of golf headed, and how will the superintendent profession change and evolve?

Ihms: Golf, although stabilized a bit, is still struggling. However, I think recently there has been a more positive attitude from golf's allied groups. I've also seen more capital investment in many facilities, which is encouraging.

On where the golf business is headed, facilities, companies and organizations will continue to look for better ways to do business. We must continue to reduce inputs, provide quality experiences, do more for less and work together to grow and strengthen the game. This requires controlling maintenance costs along with making the game more affordable and accessible. We need to lower the time commitment to play the game, and most importantly, make playing the game more fun. Superintendents are the boots on the ground and can have the greatest impact in many of these areas.

Lyon: I understand the GCSAA Board of Directors has been evaluating membership classifications, among other topics. Bring us up to date on some of these issues.

Ihms: The Board has been working on member standards and will continue in 2015. Continued on page 34

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18-6-15 + 0.164% Dithiopyr	100	50 lbs.



Continued from page 32

speaker because CBS and Golf Channel personality David Feherty makes his return to GIS after serving as the keynote speaker in 2012.

The event also features the results of the 21st Annual Collegiate Turf Bowl.Whose alma mater will take home the top prize?

Golfdom's **Herb Graffis Businessperson** of the Year presentation

(1 p.m., Wednesday, Feb. 25, booth 8069)

You've seen the man on the cover and read about his business tactics (see page 20). Now meet William Larson, CGCS, at the Herb Graffis Businessperson of the Year presentation at the *Golfdom* booth.

Once again The Open Doctor, Rees Jones, will be making the presentation of the award named after his family's good friend. Golfdom's booth hosts the presenContinued from page 34

We are looking at promotion of the entire superintendent profession and the model of designations (certification/certificates) verses individual classifications. We are proposing a bylaws change for this year's annual meeting to add a classification for equipment managers, who are key to the success of the turf maintenance team. We believe this group, through GCSAA's educational programs and other resources, will increase the superintendent's ability to meet rising course expectations.

We have also worked to reenergize the Environmental Institute for Golf (EIFG) within our membership. The EIFG is the philanthropic organization for GCSAA and its success is important. Many GCSAA programs are funded through EIFG grants.

We also believe the Rounds4Research program, which generates resources to fund research and help ensure golf's future, has been beneficial to local chapters. We're working to grow that program as well.

Visit Golfdom.com for the rest of Lyon's interview with Ihms, in which the two talk about Ihms' new job, the GCSAA's Field Staff program and the people who had the biggest impact on his year as GCSAA's president.

tation, but surely a post-show celebration will ensue somewhere afterward on the River Walk.

(That's our real No. 1 — we just don't know the time or location yet, so we couldn't list it!) @

#### COME SEE US!

Golfdom's entire staff will be at the GIS. Stop by booth 8069 at the following times to see your favorite columnist, or pitch an editor on your cool story idea.

#### Wednesday, Feb. 25th

9 a.m. — Joel Jackson

10 a.m. — Ed Hiscock

**11 a.m.** — Karl Danneberger, Ph.D.

12 p.m. — Clark Throssell, Ph.D.

1 p.m. — Graffis presentation

2 p.m. — Mark Woodward

3 p.m. — Joelle Harms

4 p.m. — Seth Jones

#### Thursday, Feb. 26th

10 a.m. — Joel Jackson

11 a.m. — Clark Throssell, Ph.D.

12 p.m. — Grant B. Gannon

1 p.m. — Joelle Harms

2 p.m. — Seth Jones

3 p.m. — Ed Hiscock

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"I always like to open with a story, but I was told I don't have time for an opening story," Karl Danneberger, Ph.D. at Ohio State University, deadpanned to the audience at the *Golfdom* Summit. "So I'd like to open with a story..."

The schedule may have been packed, but despite the pace of the 2014 Summit, attendees told more than a few stories. Some were insightful, some were ominous and some were downright hilarious.

#### Fun with Ph.D.s

Danneberger took the podium to present what he called "the most interesting research of the past year." Brushing greens with mowermounted brushes was in the Turf Doc's crosshairs in 2014, and the results he found were the opposite of what he expected.

It turned out that when his graduate students didn't give the greens a break from

brushing... they did just fine. In fact, the greens maintained their desired green speeds.

"This really struck us. We didn't measure any injury to the greens," Danneberger said. "Alot of guys will stop brushing because they're worried it'll be too much and slow down the greens. That was not the case."

Danneberger said if he would have given this talk before performing the tests, he'd be telling a totally different story. "That's why we can't assume things," he said. This research will continue into 2015, Danneberger reported.

Next up was Clark Throssell, Ph.D., *Golfdom*'s research editor.

Throssell presented on recent results found on timing nitrogen applications for fall fertilization of cool-season turf. Citing research being conducted by Doug Soldat, Ph.D., he said Nitrogen application schedules may need to be adjusted. "This research has many rethinking their fall nitrogen application... it might be bet-

Continued on page 38

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Continued from page 36

ter to apply it earlier as opposed to later," Throssell said. (Editor's note: Detailed research on this topic will be presented in a future issue of Golfdom.)

#### **Getting up close**

When the keynote speaker took the stage, odds are most in attendance didn't recognize his face. But odds are most in attendance recognized his name, having read his golf stories dozens of times in a number of news outlets.

Doug Ferguson, head golf reporter for the Associated Press, has traveled the world covering golf for the AP since 1998. In that time, he has been seen walking stride-for-stride with most final groups at golf's majors, silently observing.

Ferguson dazzled the crowd with his candor, telling a few stories that were probably meant to be kept off the record.



"I never figured out why people would stay in the press room," Ferguson told the group. "(The PGA Tour) gives us these stickers for a reason: to get up close."

#### 2014 GUEST SPEAKERS

#### **DOUG FERGUSON**

Associated Press golf reporter

#### **BOB FARREN**

CGCS, Pinehurst Resort

#### **KEVIN ROBINSON**

CGCS, Pinehurst Resort

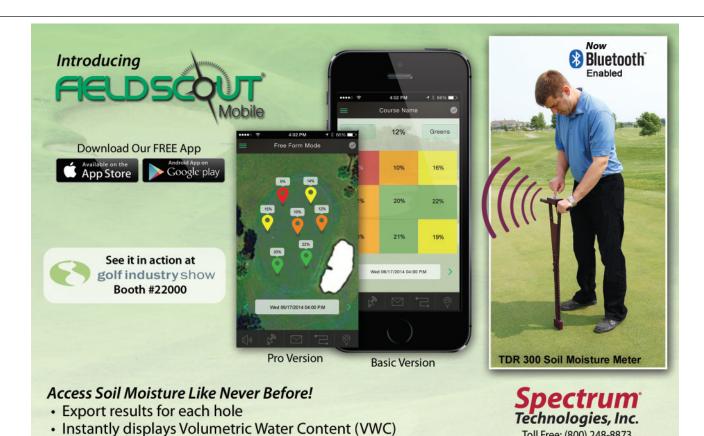
#### JIM RATTIGAN

General manager and Superintendent, Schuylkill CC

KARL DANNEBERGER. Ph.D. **CLARK THROSSELL, Ph.D.** 

It was emergency gall bladder surgery that Fergu-

son partially credited with helping him land his dream job. Working for the Associated Press in Tulsa, he was given the Continued on page 40



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Continued from page 38

opportunity to work the 1994 PGA Championship at Southern Hills. The next year, when a colleague's emergency gall bladder surgery forced him to sit out, Ferguson's phone rang.

"I'm in Tulsa in December, sitting at my desk working on a fourth-quarter earnings report, and the bureau chief calls and says, 'Want to go to Jamaica and cover a tournament?' I looked at the calendar to make sure it wasn't April 1st," Ferguson said. "Here I am in Montego Bay with Ernie Els, Paul Azinger, Fred Couples... it was unbelievable."

Ferguson took time to acknowledge the hard work of his audience, which consisted mostly of golf course superintendents.

"I think about the offensive line (in football) when I think of superintendents: you can't play without them, but you don't hear about them until someone



Jim Rattigan, formerly of Schuylkill CC, now with the Plant Food Co., challenged Summit attendees to open their minds to new variations of golf.

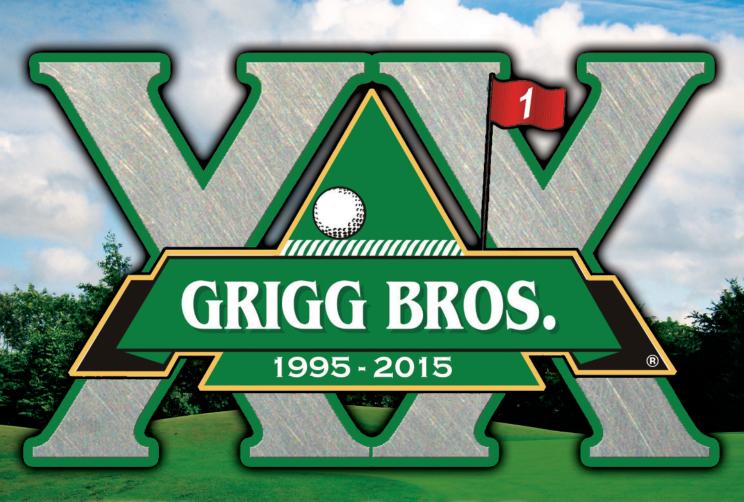
screws up," he said. He recalled a few tournaments needing a Herculean effort for golf to go on — 1997 at Heron Bay, 2012 at Congressional, 2014 at Valhalla. "People show up and the course is ready to play. They have no idea how much work it took just to continue play."

After wrapping up, he took several questions from the audience, then even took a few more at Reunion Resort's rooftop bar.

Why does the U.S. struggle at the Ryder Cup? It's cyclical, and the good news is Continued on page 42



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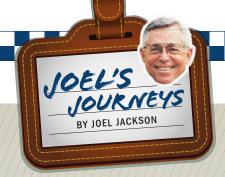
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//NEW IDEAS

# Rattigan's plan to keep golf on dry ice

Call it the "global warming" of golf if you want. Golf's economic meltdown has raised the heat on golf course owners to make a profit.

Jim Rattigan, former general manager and superintendent of the Schuylkill CC in Orwigsburg, Pa. (see page 9), and winner of the 2014 Herb Graffis Businessperson of the Year Award, took the podium to challenge all of us about what we know about the game of golf.

Rattigan compared the golf industry to a melting iceberg, referencing

the book, "Our Iceberg is Melting: Changing and Succeeding under Any Conditions," written by John Kotter and Holger Rathgeber. Rather than issue platitudes about "growing the game," Rattigan is trying new things to get more golfers and families to the course, and, hopefully, slow that iceberg down a little.

"This might make you a little uncomfortable... but I need you to go inside yourself, and find that place with everything you know about golf... and let it go," Rattigan opened, raising a few heads. "Find yourself open to new opportunities, for at least a couple minutes."

He then talked about a game he created called Chesterfield Golf, which includes a few variations on the rules of golf, as well as the installation of both regulation-sized cups and 8-inch inch cups on every green. This is an attempt to serve serious and beginning golfers as well as family golf outings.

Using a larger putting cup size isn't revolutionary, but it addresses two of the three biggest complaints about golf amoung the Millennial Generation: difficulty of the game and the time it takes to play.

I have no fear that the wonderful historic traditions of the game of golf will endure on those idyllic bastions of golf history, which are on display during major golf championships. Rather, it behooves the rest of the golf world to encourage more participation, but daring to offer alternatives to the old ways.

Joel Jackson, CGCS-Ret., is senior contributing editor for *Golfdom*.

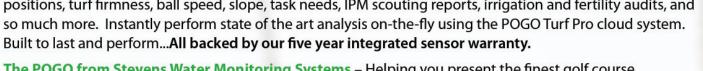


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# Super Science

**//ON THE GREEN** 

# **NITROGEN FERTILITY, MOWING HEIGHT AND TOPDRESSING EFFECTS ON ANTHRACNOSE**

By James Hempfling

nthracnose on annual bluegrass (Poa annua) greens, caused by Colletotrichum cereale Manns, can be suppressed by increasing nitrogen fertility, mowing height and sand topdressing. Effects of these practices on disease severity and ball roll remain unknown.

A 3-year field trial was initiated in 2012 in North Brunswick, N.J., to evaluate the effects. Treatments were all combinations of mowing height (0.09 and 0.125 inch), N fertility (2.05 and 4.1 lbs. N/1,000 ft<sup>2</sup>/year) and sand topdressing (950 and 2000 lbs. sand/1000 ft<sup>2</sup>/year during 2012; 750 and 1650 lbs. sand/1000 ft<sup>2</sup>/ year during 2013 and 2014). Trinexapac-ethyl was applied weekly at 0.125 oz./1000 ft<sup>2</sup>, and lightweight vibratory rolling was performed three times/week.

As expected, increased N fertility, mowing height and sand topdressing reduced disease severity; reported as the area under the disease progress curve (AUDPC). N fertility accounted for the majority of the variation in AUDPC, and mowing height accounted for a slightly greater amount than sand topdressing.



A measuring tape is placed along plots to measure ball roll distance on annual bluegrass putting green turf receiving different levels of nitrogen fertility, mowing height and sand topdressing. Interestingly, more frequent sand topdressing produced greater disease suppression when turf was maintained under low nitrogen and low mowing (compared to high) in 2012 and 2014.

Recovery from disease damage was enhanced by higher mowing, increased N fertility and more frequent topdressing. Recovery was substantially hindered by low mowing under infrequent topdressing. In regard to ball roll distance, the relative importance

of management factors differed from that observed with AUDPC responses. Increased mowing height caused a substantial reduction in ball roll distance; greater N fertility and sand top dressing had minimal effects on ball roll distance. These findings suggest that priority should be given to lowering mowing height rather than reducing N fertility or sand topdressing rates to increase ball roll distance without greatly increasing the risk for anthracnose.

James Hempfling, graduate research assistant, Bruce Clarke, Ph.D., extension specialist in turfgrass pathology and James Murphy, Ph.D., extension specialist in turfgrass management, are at Rutgers University. For more information, contact Hempfling at james.hempfling@rutgers.edu.

#### **NEWS UPDATES**

#### IN MEMORY OF JAMES ANDREW MCAFEE, PH.D.

James Andrew McAfee, born Jan. 22, 1945 in Edinburg, Texas, passed away Jan. 31, 2015 in Richardson, Texas, after a lengthy battle with pulmonary fibrosis. He is survived by his wife of 47 years, Kayla McAfee, and their three sons, two daughtersin-law and four grandsons.

McAfee received his bachelor's and Master's degrees from Texas A&M University and his Ph.D. from Purdue University, specializing in Turfgrass Sciences. In 2013, after 40 years in the turfgrass industry, McAfee retired as an associate professor and turfgrass specialist with the Texas AgriLife Extension in Dallas. His numerous professional organization affiliations include the Texas Turfgrass Association and Sports Turf Managers Association.

His influence in the turfgrass field includes in-depth research on reducing inputs of fertilizer, pesticides and water.

The family has created and asked for donations to the McAfee Memorial Scholarship at Texas A&M University. The funds will go toward a student pursuing a career in sports turf management. To make a contribution, visit www.txstma.org/dr.-jamesmcafee-scholarship-donations.html.

PROPERLY TIMING THE ADULTICIDE APPLICATION HAS BEEN THE BIGGEST **HURDLE IN ANNUAL BLUEGRASS WEEVIL CONTROL, GIVEN THAT ABW ADULTICIDES HAVE SHORT** RESIDUAL ACTIVITY."

Ben McGraw, Ph.D. (see full story on page 46) //MAN VS. ABW

# Don't fall behind in annual bluegrass weevil management

Why first-generation control is critical in winning the weevil battle.

By Ben McGraw, Ph.D.

he annual bluegrass weevil (ABW) or "Hyperodes weevil" (Listronotus maculicollis, formerly Hyperodes maculicollis) is a severe problem on many golf courses in the northeastern and mid-Atlantic United States and eastern Canada, ABW is intensely managed with insecticides to prevent larval feeding damage to greens/ collars, fairways and tees. Problems arise when early season insecticide applications are poorly timed, leading some to make multiple insecticide applications at regular intervals to keep populations in check. Understanding how ABW populations (overwintering adults, first-generation larvae) develop in spring is critical to getting the most out of controls and reducing the need for future applications.

ABW have between one to three generations per year, depending on the region. The first-generation larvae are the offspring of adults that spent the winter in an arrested state in leaf litter in wood lines and tall grasses surrounding the playing surfaces.

Each year, the overwintering adults walk onto



A recently emerged overwintering annual bluegrass weevil adult.

the short-mown areas, where mated females seek hosts (Poa annua and creeping bentgrass turf) to place eggs. If left uncontrolled, females will deposit eggs underneath the plant's sheath. The larvae develop and feed inside the plant through the first three instars. Older larvae (fourth and fifth instars) become too large for the plant and exit to feed externally on stems and crowns. These stages can cause significant damage in a relatively short



Annual bluegrass weevil females place their eggs between the sheath and the stem of the plant where they are well protected from predators. The eggs change color from yellow (top egg) to black (bottom three) as they become closer to hatching.

PHOTOS COURTESY OF BEN MCGF

time. Damage typically appears during late spring to early summer, making early season lapses in control difficult to outgrow and often extremely apparent for the remainder of the season.

Our studies indicate that greater numbers of larvae are present during the first generation and potentially more damaging than following generations (McGraw and Koppenhöfer, 2009a). However, the probability of successfully controlling the first generation is greater than subsequent generations, since summer generations (second and third) will overlap with earlier generations. Sampling turf in the summer often reveals all life stages in the same area. Most of our available chemical insecticides do not kill eggs and pupae and show little promise in controlling young larvae (first to third instars) concealed within the plant. Therefore, even welltimed applications may only provide slight-to-moderate reductions of asynchronous summer populations.

# ADULTICIDE OR LARVICIDE?

There are two windows of opportunity for controlling first-generation ABW and reducing the need for further intervention: reduce egg laying by overwintering adults (preventive control) or target larvae as they move out of the plant (curative control). Each approach can be successful, but both require precise timing and understanding of ABW development.

#### CONTROLLING OVERWINTERING ADULTS

Traditionally, superintendents have focused on reducing larval damage by eliminating overwintering adults prior to egg laying. They've done this by applying a short-residual, broad-spectrum insecticide during the period when adults walk from overwintering sites to short-mown turf areas. This approach has worked effectively for decades, though it's not without serious consequences. Superintendents who have intensively applied pyrethroids to turf areas for several years have begun to notice a decrease in ABW control. Pvrethroid-resistant ABW were confirmed in southern New England in the mid-2000s (Ramoutar et al. 2009), and we continue to document resistant populations in a much wider geographic area. The development of pyrethroid resistance has brought additional challenges as many ABW populations have become insensitive to non-pyrethroid chemistries as well (cross-resistance).

Properly timing the adulticide application has been the biggest hurdle in ABW control, given that ABW adulticides have short residual activity. Ideally, applications are timed to coincide when the majority of adults have emerged from overwintering sites ("adult peak"). We often observe a slow and steady trickle of adults appearing on greens, tees and fairways building



Forsythia has been a useful indicator of ABW adult movement out of overwintering sites and can be useful in timing insecticide applications. The "half green/half gold" stage (when the plant has lost half of its yellow flowers) has been correlated to adult peak densities on the short-mown turf areas and denotes the time when applying adulticides are most effective.

up to peak density.

Superintendents who apply before the peak run the risk of their adulticide wearing off before the majority of insects emerge. Insects are cold-blooded organisms and therefore are sensitive to large spring temperature fluctuations. Several warm days may cause significant numbers to advance toward the playing surfaces, and may be followed by days if not weeks of cool weather that cause the adults to remain in suspended animation. Adulticides applied early in the migration period may have little residual activity by the time the remainder of the population arrives.

We investigated the reproductive biology of emerging ABW adults to determine when to time controls based on the threat of egg laying. Adults were sampled weekly from greens, collars and tees from the time adults first emerged from overwintering sites until the end of the first generation. Adults were dissected to determine if females were mated and capable of producing viable eggs. Females were

Continued on page 48



Removing a soil core reveals late-instar larvae (fourth and fifth instars). These stages exit the plant, and therefore may be exposed to contact insecticides. However, older larvae are voracious feeders and capable of causing severe damage if larvicides do not work quickly, are timed poorly or have short-residual activity.

#### Continued from page 47

reproductively mature from the start of the emergence period. However, the vast majority of males captured between emergence and peak were reproductively immature and incapable of fertilizing eggs. After peak, males became reproductively mature and able to fertilize eggs. Therefore, waiting to apply the adulticide until all adults have emerged on the shortmown areas will likely lead to greater control (and fewer applications) because adults pose little reproductive threat prior to peak.

We determine when ABW populations are at peak with both passive (e.g. plant indicators, growing degree-days) and active (e.g. soap flushes, checking

clippings) techniques. Forsythia bloom has been the most common method of determining adult movement onto playing surfaces. Forsythia spp. full bloom indicates that adults have begun their migration out of overwintering sites, which should initiate scouting with more active means. Forsythia's "half green/half gold" stage, when the plant has lost half of its vellow flowers, indicates that the adults are at peak density. Weekly sampling for adults with soapy flushes (1-2 ounce liquid dish soap plus 1 gallon water applied over 3-foot x 3-foot areas) during Forsythia blooming events can assist greatly in determining the peak and in refining application timings.

#### CONTROLLING FIRST-GENERATION LARVAE

Recently, more superintendents have abandoned preventive management in favor of solely targeting larvae. Many of the larvicides are much "softer" on beneficial insects and have longer residual activity compared to adulticides, and should not require reapplication. Additionally, targeting larvae is more consistent with the tenets of IPM because it involves applying controls where the pest is present and above damage thresholds (30-40 larvae per square foot).

The main deterrents to adopting this approach are the relative higher costs of controls, difficulty in sampling and assessing larval stages, and the potential for underestimating densities. Scouting requires destructively sampling turf, typically by removing cores with a cup cutter or knife and placing the material in a saturated saline solution to extract larvae. Sampling is critical for determining when larval populations are about to move out of the plant and are susceptible to larvicides. However, it's impractical for most superintendents to obtain detailed estimates of population structure.

Curative approaches require products that work quickly and have lengthy residual activity. It's critical that controls be applied slightly before larvae appear in the soil because crown feeding can lead to rapid damage. However, it's equally important for larvicides to persist to control the larvae that have yet to emerge from plants. This is difficult because adults may lay eggs over several weeks, leading to equally long periods when larvae emerge. We caged pairs of ABW adults on Poa annua plugs in the field to determine the potential length of the egg-laying period. Females laid eggs for an average of 5 to 8 weeks, but were capable of laying for up to 14 weeks. Females laid between 60 and 90 eggs on average, with many capable of ovipositing over 100 eggs. Therefore, waiting to control larvae may lead to large populations appearing over several weeks, overlapping life stages, reduced control with single applications and

the need for multiple applications to avoid damage.

#### **COMBINED APPROACH**

In the past, ABW was successfully managed with one insecticide application. However, whether because of increased stress placed on the turf by modern cultural practices or because of pesticide insensitivity, many courses require multiple insecticide applications in spring. In areas with high ABW pressure, a sequential application (adulticide followed by larvicide) may be required. A summary of university trials conducted over 20 vears has indicated that adulticides lead to greater numerical reductions than larvicides (Koppenhöfer et al. 2012). However, even with a properly timed adulticide against a pyrethroid-susceptible population, the range of control may vary between 60 percent and 90 percent. Therefore, in dense populations, the survivors may be capable of producing enough larvae to cause damage.

The combined approach allows for increasing the safety net in control, though it may be rendered useless by a poorly timed application. It should be stressed that the larvicide application of the combination approach may not be warranted, and should only be applied if sampling reveals that the larval population has exceeded thresholds. Damage appears for a multitude of reasons, including drought stress, traffic and turfgrass species. In a study of mixed annual bluegrass/creeping bentgrass fairways, we found that pure Poa annua plots were 10 to 15 times more susceptible to damage than creeping bentgrass (McGraw and Koppenhöfer 2009b). Courses that are predominately Poa annua may benefit from sequential applications to keep larval densities lower than currently recommended thresholds.

#### WHAT TO TAKE HOME

There are strong arguments for all three management philosophies. Before formulating your ABW management plan, please realize that 100-percent control of a population is not feasible. Even the best products applied at the best possible times won't control every insect. Successful control should be defined as maintaining weevil densities that do not cause

visible damage, with the fewest applications possible.

Ideally, different approaches are needed for different areas, based on past history of damage, stress and turfgrass species. In areas where some damage may be tolerated, a single preventive or curative application is enough when scouting has determined that weevils are present in damaging numbers. No two ABW populations are identical, and because of the stresses imposed on the turf and chemical use history, different populations will not respond the same to similar controls. Taking the time to scout populations and understand the biological basis for timing products will lead to higher levels of control with fewer wasted applications.

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### References

Koppenhöfer, A.M., S.R. Alm, R.S. Cowles, B.A. McGraw, S. Swier and P.J. Vittum. 2012. Controlling annual bluegrass weevil: Optimal insecticide timing and rates. *Golf Course Management*. March 2012: 98-1104.

McGraw, B.A. and A.M. Koppenhöfer. 2009a. Population dynamics and interactions between endemic entomopathogenic nematodes and annual bluegrass weevil populations in golf course turfgrass. *Applied Soil Ecology* 41: 77-89.

McGraw, B.A. and A.M. Koppenhöfer. 2009b. Development of binomial sequential sampling plans for forecasting *Listronotus maculicollis* (Coleopters: Curculionidae) larvae based on the relationship to adult counts and turfgrass damage. *Journal of Economic Entomology* 102(3): 1325-1335.

McGraw, B.A. and A.M. Koppenhöfer. 2010. Spatial distribution of colonizing Listronotus maculicollis populations: implications for targeted management and host preference. Journal of Applied Entomology. 134: 275-284.

Ramoutar, D., S. R. Alm, and R. S. Cowles. 2009. Pyrethroid resistance in populations of *Listronatus maculicollis* (Coleoptera: Curculionidae) from southern New England golf courses. *J. Econ. Entomol.* 102: 388–392.



First-generation larval feeding damage may often be severe on the edges of rough-short mown borders. Damage expression is influenced by many factors, including larval density, turfgrass species and plant stress.

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"Golf was considered a sport of the bourgeoisie, which could result in severe penalties (like death) if you were associated with the game."

KARL DANNEBERGER, PH.D., Science Editor

# Trials and tribulations of golf

ere at The Ohio State University I can see firsthand how deep passion and loyalty can run among our football fans... especially this year! It does not, however, compare to the loyalty and passion golfers have shown for hundreds of years toward the game of golf in the face of so much adversity.

It is difficult for those who do not play golf to understand the inner strength that comes with golf. History speaks to the courage, struggle, survival and hope associated with those people in the past and even those today, in places like Afghanistan, who play golf.

From the earliest days in Scotland, golf was often referenced in proclamations in an effort to ban the game. In 1457, King James II proclaimed "that soccer and golf should be utterly condemned and stopped..." which was repeated by King James III in 1471 and then by King James IV in 1491.

Often romanticized, these bans inferred that the common Scotsman was gallivanting around the hillsides playing golf when they should have been practicing archery to defend against the English. However, during this time England was too busy fighting among themselves (War of Roses, 1455-1487) to care what was going on in Scotland.

More likely, the Scottish Kings wanted their own loyal soldiers and court to practice archery to protect them from their own people, who especially despised King James III. Whatever the case, the archery practice didn't help given the Scots lost to the English in the Battle of Flodden Field in 1513.

During the Reformation (1517 – 1550), John Knox, who was a Scottish clergymen and considered the founder of the Presbyterian Church, was a powerful preacher who rallied and instigated his following in establishing the Protestant faith. It was in the heart of St. Andrews where John Knox preached. The Church was against people playing sports, particularly on the Sabbath. Fines were set at 20 shillings for an offense. That was a fortune and no commoner could have possibly paid it — only the wealthy were targeted at that sort of figure.

Had it not been for the few golfing

societies, all of them formed by Freemasons, golf would not have survived. There probably were not more than 500 players at any one time. This number was drastically reduced by the late 18th century because the French Revolution was sweeping Europe and the United Kingdom. Golf was considered a sport of the bourgeoisie, which could result in severe penalties (like death) if you were associated with the game. But why stop there — at the same time the British Agricultural Revolution (18th century) was occurring, which resulted in many golf clubs being plowed under for agricultural purposes.

So here I am now looking at a photograph that was taken last October in Morocco, where African migrants, many from the Sub-Sahara, were scaling a barbed wire fence around the town of Melilla, which sits on the border between Morocco and Spain. Many of the reports referred to this crossing as "African migrants trying to get into the 'promised land' of Europe."

What makes the photograph so striking to me is the lush golf course that is located on the 'promised land' in the foreground with the migrants stuck behind the barbed wire fence in the background looking at the golfers. The photograph is a striking symbol of the chasm between the "haves" and "have-nots."

Golf has and always will be a polarizing game between those who have an undying passion toward it and those who see it as representing something unfair about society, whether it is true or not. Golf faces a plethora of issues, of which many are associated with the business of golf. I am reminded that the game itself is OK because history says so. As long as there is a person willing to pick up a club and hit a ball into the hole, the passion lives.

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

# Coming Soon...



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February 21-26, 2015 | San Antonio, Texas Henry B. Gonzalez Convention Center

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Scan now to see what's coming in February 2015!



# Bringing precision to topdressing

Scott Kinkead is executive vice president of Turfco Manufacturing Inc., and has worked in the golf course industry his entire career. Kinkead is active in all aspects of the company and enjoys bringing new technology to Turfco's products. Scott can be reached at scott@turfco.com for more information.

# What was the genesis of the new spin topdresser and control technology?

During the recession of 2008 and the downturn in the golf economy, we realized we needed to make products that were more efficient and effective at accomplishing the task at hand so superintendents could stretch their labor dollars further and free up time for other tasks. Our focus on topdressers was to bring more technology

The volume of topdressing being applied can be changed by the push of a button.

to a topdresser so a superintendent could apply a specific volume of sand and consistently repeat that application over the entire season. We wanted to make topdressing more precise and less of an art form.

# Where do you start the process?

We started by enhancing the hydraulics and redesigning the spinner so a superintendent could apply different volumes of sand to different components of the golf course without having to make any mechanical adjustments to the topdresser.

The topdresser has a wide range of belt speeds, spinner speeds and gate settings so that the volume of topdressing being applied can be changed by the

push of a button.

While not high tech, we expanded the hopper to 80 inches long to match up with the bucket length of a frontend loader to ease loading and avoid waste.

# Tell me about the control technology.

A superintendent can adjust the belt speed, spinner speed and gate settings to achieve the desired application volume. Once the desired volume has been achieved, with the push of a button all those exact settings are saved and can be recalled by pushing the same button later in the season. The control device allows for four unique settings. One setting could be for a spring/fall topdressing for greens, a second for a summer topdressing for greens, a third setting for topdressing after the greens have been aerified and the fourth setting could be for tees and approaches.

The operator can topdress a green using the spring/fall setting, and while driving to an adjacent tee press the button for the tee and approach setting and topdress the tee

# What else can a superintendent do with the control device?

A superintendent can calculate the exact volume of sand being applied to a given area by plugging in the spinner speed, belt speed, gate setting and the square footage of the area to be topdressed. The device will calculate the volume of sand to be applied. This feature adds precision to topdressing by determining the actual volume of sand applied, say 0.4 cubic yards per 1,000 square feet.

Knowing the exact amount of sand being applied is becoming more important as many agronomists are recommending a specific volume of sand — for example 40 cubic yards of sand per 1,000 sq. ft. — be applied to a green per year. If a superintendent knows the target for volume of sand per year, the control device can determine how much sand is applied per application and then the superintendent can schedule the number of applications needed to meet the target.

# Anything else you would like to add?

We are trying to bring more control to topdressing, which will help superintendents take full advantage of the knowledge developed by scientists. We are striving to make sure the topdresser is not a limitation in the topdressing process.



Clark Throssell, Ph.D., loves to talk turf. Contact him at clarkthrossell@ bresnan.net.



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# SEE 'EM IN SAN ANTONIO

IT SEEMS A DAUNTING TASK TO VISIT HUNDREDS OF EXHIBITORS AT THE GISTRADE SHOW BUT, GOLFDOM HAS A PREVIEW OF A HANDFUL OF PRODUCTS.

BY GRANT B. GANNON // Associate Editor

**IN ORDER GIVE OUR READERS** an idea of what will be in San Antonio we took to social media and contacted vendors to ask which products will be making the trip. The response we got back yielded products from various industries: insecticides, fungicides, mowers and golf carts. Look for these among thousands of others. And be sure to stop by the *Golfdom* booth, too.

In the meantime, check back to see what else we discovered in person — we're going to be all over the GIS this year, and we'll bring you the best of the best.

### 1. Disarm+T fungicide

This fungicide from FMC provides preventive and curative protection through the combination of the two systemic ingredients: fluoxastrobin, a leading strobilurin chemistry, and tebuconazole, a leading DMI. Disarm+T fungicide protects the root and leaf for a onetwo punch against many tough diseases, including anthracnose, dollar spot, snow mold and multiple patch diseases. Also, it optimizes resistance management with dual modes of action.

FMCProsolutions.com

### 2. Precedent 4Fun

**CLUB CAR'S** Precedent 4Fun introduces their first four-passenger golf car in conjunction with the PGA of America and the Get Ready Golf Program. The golf car is powered by a 3.7-hp motor and has features to encourage golf's sociable side. Groups of golfers or families fit in the four forward-facing seats, and enjoy four golf bags attachments, including junior-sized bags, and eight cup holders. The Precedent 4Fun is equipped to integrate Club Car's Visage

Mobile Communications System. Initially introduced at facilities with established Get Golf Ready programs, the Precedent 4Fun is now in full production.

clubcar.com

# 3. 220 E-Cut Hybrid Walk Greens Mower

JOHN DEERE designed the 220 E-Cut Hybrid Walk Greens Mower with several innovations, including a fully contouring Quick-Adjust 5 Cutting Unit for undulating greens, and E-Cut Hybrid Technology that lets operators mow a smooth, even finish on greens. It also offers the exclusive ball-joint mounting system to follow contours and steer around the cleanup pass, which gives the unit the freedom to rotate in any direction - fore/aft, laterally sideto-side and 6 degrees of steering right and left. The cutting unit's range of motion can be adjusted to meet most conditions, making it easy to steer through the cleanup pass and reducing stress around the outside of the green.

johndeere.com/golf

#### 4. Ference insecticide

**SYNGENTA'S** Ference is an insecticide available to superintendents to control the annual bluegrass weevil (ABW). Ference provides systemic control of all larval stages of ABW, which is critical to control asynchronous ABW populations. The active ingredient Cyantraniliprole stops turf-feeding damage within minutes after ingestion. It can be applied to all turfgrass areas on the golf course, including tees, roughs, fairways, greens and collars. Ference delivers season long control as well as resistance management when used as part of the Syngenta Optimum Control Strategy through WeevilTrak. com.

syngenta.com

#### 5.Truckster XD

According to JACOBSEN, their new Truckster XD utility vehicle boasts the industry's largest payload capacity at 3,550 pounds. The bed is 20 percent bigger by volume and constructed with thicker steel, making it more durable. For those looking for a roomier cab, the 60-inch-wide cab offers more space between

seats as well as more leg room for tall operators. This also allows for more space between switches on the dash, making for less clutter. The approach angle of the vehicle is 26 degrees, making it harder to scuff the bottom of the vehicle and damage either the course or the Truckster.

jacobsen.com

# 6. Macro-Relief Salt Stress Reliever

For golf courses where salt is a factor in everyday life, MACRO-SORB is introducing the Macro-Relief. It is an osmotic regulator that improves the plant's ability to absorb water under high salinity growing conditions. It's key benefits include a proven ability to enhance turfgrass quality grown under high EC soil and irrigation conditions. It contains essential L-amino acids that activate physiological processes in the plant to combat salinity stress and provides readily available calcium to support plant cell growth and development and enhance stress tolerance.

macro-sorb.com

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# The Can Company of the Company of th

# **Tyler Otero**

**SUPERINTENDENT** // North Jersey CC, Wayne, N.J.

**After 18 holes of golf, what's your drink of choice?** A nice, ice-cold light beer. The kind with ice on the pint glass, and you can slam it down like it's a water.

What about on a snowy day like today? Either a nice bourbon or a scotch on the rocks; a Woodford Reserve, or Knob Creek in the bourbon realm; Glenfiddich in the scotch realm.

How did you and your wife,
Meredith, meet? We were both working at Trump National Colts Neck. She was the receptionist and I was the superintendent. She was taking lunch orders each day in the wintertime, and that's how I got to talk to her. I wasn't very smooth because she would forget my order every now and then. So that gave me a reason to stop by her desk, and I made sure to slip her my cell phone number so she wouldn't forget me for lunch.

#### What's your favorite commercial on

**TV?** I'm all about commercial-free viewing these days — Netflix and Amazon Prime. But I laugh at the Geico commercial with Ickey Woods getting his cold cuts.

Your previous course, Trump National Bedminster, is hosting the 2022 PGA Championship. Any regrets not being there to host it? They're also host-



ing the 2017 U.S. Women's Open. I have no regrets leaving, and I was really happy for Mr. Trump. He hasn't hidden from the beginning that he wanted a major championship. Mostly I'm happy for all the people who worked toward that goal. It almost validates what we were doing. Sometimes you got the feeling that because he's so polarizing as an owner, that they didn't give you the credit for the product we were putting out.

Tell me something interesting about North Jersey CC? It's one of

the founding clubs in New Jersey,
founded in 1895. It's a Walter
Travis design, known for blind
shots and undulating greens.
We're 20 miles from New York
City, on 325 acres, and almost
entirely encompassed in forest
— which is nice when you're in

such a densely populated area.

Fill in the blank: Tomorrow I'm going to wake up and \_\_\_\_\_: It's a Friday, so I'm going to get up and hopefully make it to the gym before work, then have a normal work day, then go out after work for some adult libations.

**To where and with whom?** With Meredith. We go out for a burger and a beer on Fridays — there's this place in Asbury Park, N.J., called Bond Street Bar. It's a hole-in-the-wall, cash only, kitchen the size of a closet, there's one table, a bar and a shuffleboard table.

**Hopefully she won't forget your order.** If she does, it gives me a mulligan for a missed birthday or anniversary down the road!

As interviewed by Seth Jones, Jan. 29th, 2015.

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# TURFONOMICS

# IT'S NOT HOW MUCH YOU PAY FOR EQUIPMENT. IT'S HOW MUCH YOUR EQUIPMENT PAYS FOR ITSELF.

Introducing the Toro® Reelmaster® 5010-H hybrid fairway mower. The only true hybrid fairway mower on the market, it delivers the Toro performance you need plus the efficiencies today's courses require. It's not only smart, it's the future.

It's simple Turfonomics.



# The industry's first and only true hybrid fairway mower

While other fairway mowers may call themselves hybrids, only the Toro Reelmaster 5010-H is a true hybrid. With a Tier 4 compliant diesel engine working in concert with a generator and a self-charging battery system, it brings power and fuel efficiency together like no other mower.

# The power of PowerMatch™ Technology

With PowerMatch Technology, you get precisely the power you need for the application demand. When extra power is needed, the system sheds the cutting unit's load from the engine to the battery pack. If even more power is needed, the battery pack boosts the engine power through the generator to deliver up to 42hp – all while maintaining consistent reel speed across all five cutting units.

# The mower that pays you back

Toro's unique design eliminates all of the cutting unit's hydraulic components plus all of their maintenance. That equals up to \$1,100 in savings for 800-1,000 hours of operation.\* The efficient power management system also saves about a dollar per hour of operation on fuel costs.†

# See the future of today's courses

Times are changing. And Toro is changing with them to give you the best overall course conditions combined with a lower cost of ownership over time. Talk to your distributor about our new hybrid technology. More than a mower, it's the future of efficiency. It's simple Turfonomics.



Reelmaster 5010-H

# Fairway Rolling at a Fraction of the Cost. And Your Savings Don't Stop There.



## The new Smithco RollStar Fairway Roller. Three rollers deliver 2220 lbs. of rolling weight.

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- 10-foot wide rolling capacity at 10 mph equals 12 acres/hour.
   Twice as fast as mowing.
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- Three rollers follow the contours of fairway, delivering 2220 lbs. of rolling weight. Plus 100 gallons of water weight when you need it.
- Clevis hitch makes attaching to most any utility vehicle fast and easy. Use vehicle remote hydraulics or optional electric/ hydraulic pack.
- Three hydraulically controlled heavy gauge steel rollers fold forward inside the wheels for narrow bridge paths in transport.

Smithco.com



# NEW ULTRA LITE GREENS ROLLER The lightest footprint in a dual drive system

- At 605 lbs., it's the lightest riding greens roller made with dual hydraulic roller drive for superior traction and maneuverability.
- The only roller with direct drive which does away with the chain maintenance required by mechanical systems.
- The hydraulic operation of both 8" seamless tapered drums eliminates slipping on steep slopes and the damage caused by singledrive rollers.