

not alone. But his quiet, organized, steady and persistent efforts and attention to detail were evident when he met many times with the Dean and helped rally colleagues in the industry.

It didn't hurt that he was an artist with his second craft - painting with words!

In my mind the O.J. Noer Research facility may never have occurred without Monroe, for instance. Is it true that the pen is mightier than the sword? We know how he elevated The Grass Roots to new heights. I confess, though, that sometimes I hated his call for another article, not because I minded such - I simply was out of fresh ideas. Never mind, Monroe always had some to share! But he wanted substance, not fluff.

It took a while, but his value eventually was recognized and manifested when he was awarded Honorary Recognition by the College of Agricultural and Life Sciences - its most esteemed accolade. He was also appointed to the Dean's Advisory Committee, which is composed of the greatest agricultural minds available in the state and region, and where he could continue to provide valuable insight for turf as well as the whole of agriculture. He made other valuable contributions I won't bother to mention. We were fortunate that Monroe came along when he was urgently needed - we all agree, I'm sure, that he made a huge difference!

Dr. Frank Rossi, Associate Professor of Turfgrass Science, Cornell University

Thoughtful

If I had to find one word to describe the most important characteristic of the best golf course superintendents I know it would be thoughtful. I firmly believe if we are thinking about what we do, there is a fairly good

chance we will do it well.

Monroe is the most thoughtful superintendent I have ever known. Most of us know that this thoughtfulness goes WAY beyond his life as golf course superintendent. He has been a thoughtful friend, buying my wife and I a lovely personally engraved crock; a thoughtful mentor, helping me become a better writer; and a thoughtful confidant, listening to my fears, hopes and dreams many times in his office during my UW days.

Monroe, likely without knowing has mentored many a young "Prof" at UW. I always felt lucky to have been able to spend time in his office. I would have liked to spend more time with him and our friend, Wayne Otto. These two guys with Harrison and Quast helped shape what we all benefit from today.

This industry, especially the UW community, will miss

Monroe. I am proud to be counted among his friends and only hope I can be as thoughtful to my students and colleagues as Monroe has been

Rich Anderson, Reinders Inc.

There were several of us over the years that had the opportunity to call on Monroe with our distributor Reinders. We all looked forward to calling on Monroe. We knew we had to continually earn his business, but he was fair and you knew exactly where you stood with Monroe and Blackhawk CC. He was a very astute buyer, and was a great steward of the club's dollars. Monroe was great about separating business from the common bond and friendship of our industry. It is people like Monroe Miller who make this industry of ours a great one. All of us at Toro consider him a friend.

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Under Pressure: Diagnosing and Managing Turfgrass Anthracnose

By Dr. Jim Kerns, Department of Pathology, University of Wisconsin - Madison

Turfgrass anthracnose is a devastating disease of creeping bentgrass and especially annual bluegrass. However, turfgrasses are not the only plants that are affected by anthracnose diseases. Matter of fact anthracnose as a word, is a symptom characterized by a dark, sunken lesion. Anthracnose is a devastating disease of strawberries, sorghum, corn, and many other fruits and vegetables. In strawberries, when the anthracnose pathogens are detected the crop is immediately destroyed! So imagine have 100 or 200 acres of strawberries and having to till the crop under because of a mild outbreak of anthracnose! The point is, anthracnose is a scary disease for turfgrass professionals as well as agronomic professionals.

Turfgrass anthracnose is caused by *Colletotrichum cereale* (formally *C. graminicola*) and is also a pathogen of sorghum. So why did the name change? With recent advances in molecular biology, researchers at Rutgers University determined that the turfgrass anthracnose pathogen was more closely related to the sorghum anthracnose pathogen (*C. cereale*) than to the corn anthracnose pathogen (*C. graminicola*). There are two types of turfgrass anthracnose: foliar anthracnose and basal rot anthracnose. The latter is the phase of the disease that terrifies turfgrass managers. A question that always comes up is-what comes first, the foliar or basal rot?? Well essentially this is like asking what came first the chicken or the egg. What we are really concerned with is accurately diagnosing turfgrass anthracnose and managing the disease. However, in my opinion I think the pathogen infects the leaf first, then as the plants are subjected to stress the pathogen migrates to the crown. Again that is my opinion and may be wrong.

So back to the two types of turfgrass anthracnose, it's really not important to know if you have foliar or basal rot anthracnose because they are induced by the same organism. Both phases of the disease are destructive and controlled with the same chemicals and cultural practices. Symptoms of anthracnose during warm weather initially appear reddish brown or yellow and the turf thins out in irregularly shaped patterns (Figure 1). Affected areas may exceed several feet in diameter or more and stand symptoms may develop into brown, circular patches that may be confused with brown



Figure 1. Stand symptoms of anthracnose of an annual bluegrass fairway. Note the irregularity of the symptom and that creeping bentgrass is surviving.



Figure 2. Close-up of stand symptoms of anthracnose basal rot of annual bluegrass putting green. Note the orange tint of the affected plants.

patch. Before plants die, they turn bright yellow or orange yellow (Figure 2). This phase of anthracnose can be confused with summer patch on annual bluegrass. Plant symptoms for anthracnose include oblong reddish, brown lesions (Figure 3). Leaf lesions may or may not be present when stand symptoms are observed. Crowns may be water-soaked, rotted and

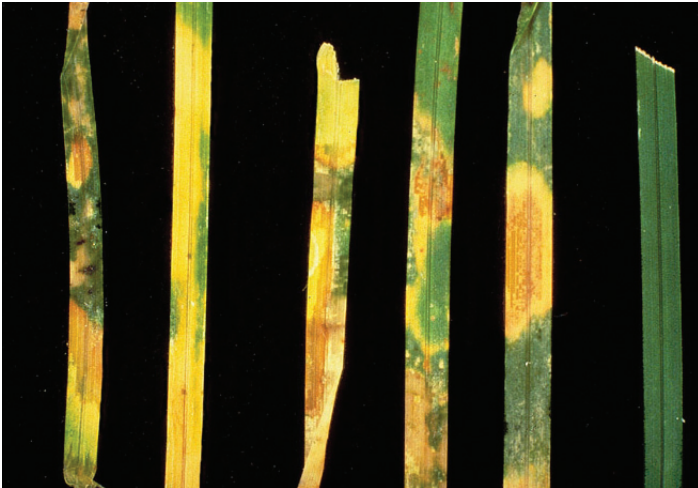


Figure 3. Anthracnose foliar blight symptoms on Kentucky bluegrass, note that the lesions are also an orange tint.

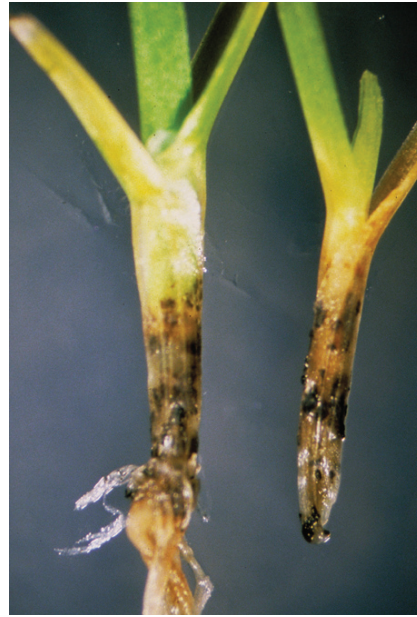


Figure 4. Plant symptoms of anthracnose basal rot on annual bluegrass. Note the necrosis and water-soaking of the crown and the acervuli populating the necrotic or water-soaked areas

blackened. If you have a microscope you will observe the pathogen's fruiting body (acervuli) on rotted crowns, leaves, or stems (Figure 4). Acervuli are saucer shaped structures with spines (setae) emanating from the structure's surface

One note of caution with examining declining turfgrass under a microscope, acervuli are commonly found on turf that is healthy and completely dead. The key is observing the acervuli with the appropriate stand and plant symptoms described above. Another word of caution, many other fungi associate themselves with the anthracnose pathogen. If you are unsure if anthracnose is inducing a decline in your turf stand, please submit a sample to the TDL. Misdiagnosing anthracnose can lead to severe losses in turf.

What are the conditions that favor development of turfgrass anthracnose on annual bluegrass and creeping bentgrass? In annual bluegrass stands, anthracnose can develop throughout the year. Yet, the vast majority of disease development occurs during the

summer months when the plants are subjected heat and drought stress. Anthracnose typically only develops on creeping bentgrass when plants are subjected extreme heat and drought stress. For us in Wisconsin, we are concerned with anthracnose on annual bluegrass. If anthracnose develops on creeping bentgrass then good luck! Just kidding, anthracnose on creeping bentgrass can be difficult to manage, but not impossible.

Anthracnose is a stress induced disease. Therefore low mowing heights and extreme temperatures are usually required for disease development. Anthracnose is more severe when nitrogen levels are low. Symptoms initially appear on upland areas that prone to moisture stress. Extremely abrasive cultural procedures such heavy topdressing and dragging may also predispose turfgrasses to anthracnose. Finally disease development is favored by compacted soils and soils that drain poorly. The bottom line with anthracnose is, any stress may predispose your turf to infection by the anthracnose pathogen.

Management of Anthracnose:

The remainder of this article will focus on best management practices of anthracnose and I will rely heavily on the article published in *Golf Course Management* (August 2008) by Murphy et al. If you have not read this article and you deal with anthracnose, READ this article! I will summarize the major points in this section of the article.

For annual bluegrass stands, applications of Signature (4 oz/M), Daconil Ultrex (3.2 oz/M), Alude (6 fl oz/M), or combinations of Signature (4 oz/M) and Daconil Ultrex (3.2 oz/M) or Alude (6 fl oz/M) and Daconil Ultrex (3.2 oz/M) work very well. For creeping bentgrass anthracnose epidemics, tank mixing

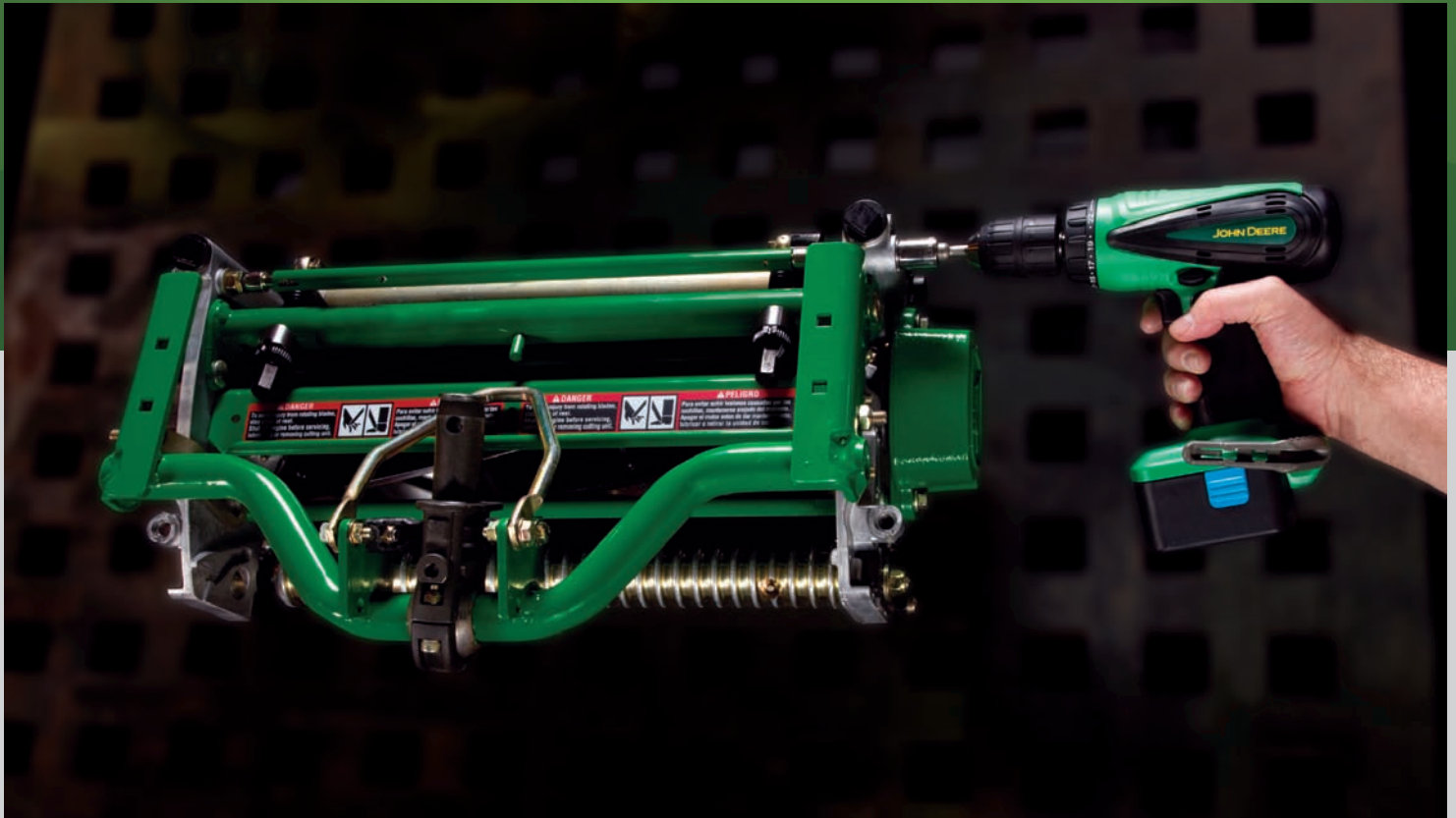
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Signature (4 oz/M) and Daconil Ultrex (3.2 oz/M) work very well for limiting anthracnose development. If you are trying to target more diseases with an anthracnose application, DMI's such as Banner Maxx, Tourney, and Triton FLO are also effective for anthracnose control. Consult the label for these chemicals for the appropriate rates. However, be cognizant of growth regulating effects of the DMI's if they are applied during the summer. When anthracnose is a persistent disease problem, preventative applications are recommended—even though the benzimidazoles, DMI's and QoI chemistries have excellent curative activity. Furthermore, curative applications may facilitate the development of fungicide resistance.

I understand that I have skimmed over chemical control of anthracnose, but for good reason. What is very interesting about the article published in GCM, is the use of cultural practices to control anthracnose. While writing this article, I was in Thailand with Dr. Soldat speaking on sustainable management of golf courses in Southeast Asia. The climate there is perfect for growing warm-season grasses, but there are times of the year that disease can develop. During our trip we visited Dr. Micah Woods' (director of the Asian Turfgrass Center) research area and saw that diseases can be effectively managed with good, aggressive cultural management. I know the area does not receive a lot of traffic, but still he has never applied a fungicide to the property!

Please do not misinterpret the statement above. I understand full well that chemicals are effective and many times necessary for controlling turfgrass diseases. My point is to get you to think about modifying your cultural practices or try new things in an effort to limit fungicide applications. So my final paragraphs will summarize the cultural practices that affect anthracnose development.

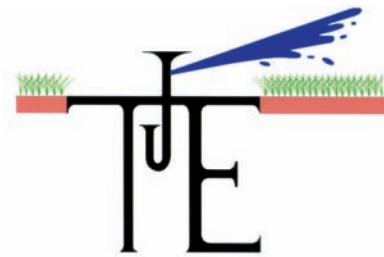
First, if you attended the spring business meeting you remember that I talked about nitrogen fertility. Well the GCM article shows that light, frequent applications (every 7 d at 0.1 lbs N/M) of foliar applied nitrogen help alleviate the anthracnose symptoms. The authors also mention that applications of N every 14 d increased fungicide efficacy for control of anthracnose. It is noted in the article that 3 lbs N/M/year with a greater proportion applied in the fall seemed to reduce anthracnose development on annual bluegrass fairways. More work is still needed in this area however.

Chemical growth regulators such as Embark, Proxy and Primo do not intensify anthracnose severity and occasionally they may slightly reduce anthracnose severity. Combining light, frequent nitrogen applications with seed-head suppressors such as Embark or Proxy have been shown to significantly reduce anthracnose development.

For those turfgrass managers that have a chronic anthracnose problem, raising the mowing height ever so

slightly (0.015 inches) can decrease disease severity. If raising the mowing height is not an option because of an important club event, double-cutting and lightweight rolling do not magnify anthracnose development while maintaining fast putting surfaces. Light frequent applications of sand topdressing at 1 to 2 cubic feet / M quickly and effectively reduced anthracnose severity. Moreover, applications of sand topdressing every 21 or 42 days at a higher rate also provided significant reductions in anthracnose development. During this experiment, the authors also tested the effects different sand incorporation methods and sand particle sizes on disease development. The researchers found that incorporation methods (at least the ones tested in this particular study) did not amplify anthracnose severity. Both sources of sand used in the experiment enhanced anthracnose severity when first applied in July, yet continued topdressing reduced disease severity in August and September of subsequent years.

This is a very basic summary of the article published in GCM and I highly recommend reading this article. However, I am not advocating that you applied these strategies without testing them yourself. If you interested in trying these management techniques, then pick an area of the golf course that has chronic anthracnose problems and tinker with some of the cultural practices described in this article. Understandably the climate and management practices in Wisconsin are different from those in New Jersey and North Carolina; yet when not try a new technique for anthracnose control. Who knows it may just work and your course may save a buck or two while still maintaining good quality playing surfaces! 🌱



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My Summer Internship at Ballyneal: Getting Down with Brown!

By **Brendan Dolan**, Student in Soil Science - Turf Management, University of Wisconsin - Madison

I am a senior at the University of Wisconsin-Madison majoring in Soil Science-Turf Management in hopes of one day becoming a golf course superintendent. From 2004 to 2007 I was on both the maintenance and construction crews at Erin Hills Golf Course in Erin, Wisconsin. With summer of 2009 fast approaching, I wanted to share some of my internship experiences from 2008, as it was a great adventure.

Since I was headed into my senior year, I wanted to try something different that would challenge my turf knowledge and give me ample opportunities to expand my abilities. I sought an internship that would take me out of my comfort zone, yet still allow me to work with cool-season grasses. Ballyneal Golf and Hunt Club in Holyoke, Colorado was the perfect fit for my goals. This prestigious club, which is located in the plains east of the Rocky Mountains, was founded in 2006 as a walking only club. The course is quite rugged as it was carved between, over, and around large sand hills that extend down through Nebraska and into north-eastern Colorado.

Maybe the most interesting aspect, and the main reason I chose to spend my summer at Ballyneal, is that the course is nearly 100% fine fescue. This makes it one of the only courses in the country with fine fescue greens. Adding to the difficulty of maintaining fescues at greens height is an extremely harsh climate, which is highlighted by temperatures that often reach 100 F, consistently strong winds, and very little summer rain. All these factors contributed to make my summer 2008 internship an



Dave Hensley, Ballyneal's golf course superintendent and author Brendan Dolan in front of the club's entrance.

extremely rewarding and informative experience.

The greatest challenge that superintendent Dave Hensley and crew at Ballyneal faced is maintaining fine fescue greens. The greens are a combination of several species of fine fescue combined with a little bit of colonial bentgrass. Since fescues cannot withstand mowing heights as low as bentgrass, the greens at Ballyneal are maintained at 0.220 inches with some fluctuation throughout the growing season. Thus, unlike a typical bentgrass green where the goal is to create a stand of turf that completely covers the soil, the exact opposite is true at Ballyneal. To get greens speeds at ideal conditions on a daily basis it is imperative on fine fescue greens that the turf stand be healthy but that some sand be seen through the canopy. Therefore the greens are kept on a mean and lean fertility plan of less than 2 lbs of N/M a year. It was indeed interesting to see how quick and smooth the greens were throughout the summer even though the mowing height was higher and turf density lower than an average putting green.

Another interesting problem that had to be dealt with was the effect of the colonial bentgrass on the greens. Due to the creeping nature of the colonial bentgrass, the areas where this grass type was thriving, green speeds were slower as the stand of turf was much denser than areas that were dominated by fine fescues. Therefore we tried a number of different cultural practices in these areas to thin them out. Twice during the summer we aggressively broomed the greens with a pull behind greens broom, which was then directly followed by mowing them in the opposite direction. Areas or greens with extremely large stands of colonial bentgrass were even manually brushed and then mowed a number of times throughout the summer.

I did not expect that Ballyneal would even have reels for vertical mowing, yet on several occasions throughout the summer areas with colonial bentgrass and thicker stands of fescues were aggressively verticut. Colonial bentgrass stands were difficult to deal with, but through a number of unique cultural practices we were able to pre-



Some severe summer stress on Ballyneal's 11th green. With irrigation and rain the turf was able to recover



The 6th hole at Ballyneal, as a storm rolls in!

sent consistent and enjoyable putting surfaces at Ballyneal.

Particular care was taken each and every day in deciding when to mow and roll greens. There were a couple times during the summer where greens did not get mowed three days in a row due to high temperatures, as the fescue slows down its growth when it is under stress. This was quite a shock to me as I was used to seeing greens mowed on a daily basis in my past experiences. Instead of mowing the greens we often rolled, but on certain days only new hole locations were cut. There were a number of key factors, including temperature stress, wear tolerance, and growth rates that played into Dave Hensley's decision process of how to maintain the greens on a daily basis. Often when heat stress was going to be extremely high, greens were neither mowed nor rolled. Due to fescues relatively low growth rate, mowing was skipped quite often during the summer months and the greens were only rolled. By altering the daily maintenance practices on the greens it severely reduced wear and stress which promotes healthy fine fescue.

I learned a lot of good tactics on how to deal with severe water restrictions while out at Ballyneal. In the summer of 2006 during grow in; Colorado received very little rain causing Hensley to turn off a number

of heads on the perimeters of the playing corridors to conserve water. Even with some heads turned off the new turf was still under irrigated and the club adopted the motto of "Get down with brown". They have continued to use this motto to guide them in their irrigation practices. Hensley has adopted deep and infrequent irrigation practices, to encourage deep rooting, and it is not uncommon to see a number of humps and hillocks throughout your round that only have a small tinge of green. A soil probe became my best friend as we were constantly checking soil moisture to determine if irrigation was needed. This past summer I put into practice a number of irrigation tools that will help me conserve water, which will be a major benefit in the future.

Another reason I chose to intern at Ballyneal was that they did an intern switch with the heralded Sand Hills Golf Club in Mullen, Nebraska. We also volunteered at the U.S. Senior Open at the Broadmoor Resort in Colorado Springs. Both of these experiences were extremely rewarding as I learned a great deal. Sand Hills was interesting as their fairways are primarily fine fescue, but they have cart traffic and the owner prefers that the turf is kept green. Without water restrictions their irrigation practices are extremely different than those at

Ballyneal, as they irrigate more often to help deal with the cart stress. They also had a different approach to disease management. Ballyneal is fortunate to have very little disease pressure and thus Dave preferred to use cultural practices to handle possible problems and only if necessary use fungicides. At Sand Hills they used fungicides as both a curative and preventative tool. Seeing how both of these high profile clubs dealt with issues differently showed me that there are many ways to get the job done right.

The U.S. Senior Open was another great experience. Volunteering at this prestigious tournament showed me the infrastructure and organization that is needed to run an event of this size. These two experiences greatly added to my summer internship as I learned a number of important lessons.

The summer of 2008 was a great experience that will only help me as I pursue a career in the golf industry. The lessons I learned about turf management are invaluable, but more importantly my 2008 internship furthered my understanding of the importance of teamwork and my love for the game and the industry. I am extremely thankful and grateful for the opportunity that Dave Hensley and the Ballyneal family afforded me, as it was truly a summer to remember! 🌱

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A Good Time in the Big Easy.

By David Brandenburg, Golf Course Manager, Rolling Meadows Golf Course

The biggest show in turf became a little smaller in direct result of the economic challenges many in the golf industry are facing. Numbers from New Orleans show attendance at the Golf Industry Show (GIS) was 17,250. New Orleans was anticipated to draw 21,500 in comparison to 25,500 attendees in Orlando at the 2008 show.

There were 765 exhibitors on the show floor that encompassed just under 6 indoor acres at the New Orleans Morial Convention Center. On the positive side the GCSAA Education Conference drew 5,258 people to the 123 seminars and 69 free sessions held throughout the conference.

The show floor seemed pretty empty to me however a GCSAA key indicator of show success noted 7,000 qualified buyers were able to take the opportunity for more one on one time with industry leaders.

This was my second trip to New Orleans and it is clear the city and its residents have done a great job recovering from Hurricane Katrina. The areas of the city we were in are up and running and it was hard to imagine the damage they faced a short time ago. Unfortunately some areas of the city have a long ways to go on the road to recovery. Many attendees of the GIS took time to volunteer for Habitat for Humanity and worked on home construction crews to help in the local rebuilding efforts.

My time at GIS started on Wednesday with the "Thinking Your Way Through Problem Solving in Turfgrass Management and More" seminar taught by Dr. Al Turgeon (Professor of Turfgrass Management at Pennsylvania State University) and Dr. Joe Vargas (Professor of Turfgrass Pathology at Michigan State University). I knew I could not go

wrong spending 8 hours with two of the most respected leaders in the turf industry and they did not disappoint.

The attendees were broken into groups by table and each group was given 6 different environmental, cultural, pest or people (club politics) problems to solve using systematic analysis and problem solving techniques. We then took turns giving our solution to the entire class while receiving feedback from the other groups and the professors. As expected, no matter how well a group did Dr. Vargas and Dr. Turgeon had another key point or solution to add to our well thought out plan. The day flew by and I would recommend this seminar to anyone looking to improve their problem solving techniques.

Wednesday night brought a large group of Wisconsin Chapter members to the GCSAA Welcoming Reception with a Hors d'oeuvres selection expansive enough to serve as dinner saving a few bucks on the trip. It was a great start to the conference and an excellent time to catch up with friends not seen in some time.

Thursday began with the Innovative Superintendent Session at 6:30 am. It was the first time I could really tell attendance was down at this years GIS. A room set up for over 2,000 attendees may have had 150 in it at most. I am sure it was a combination of lower show attendance and the realization the New Orleans nightlife does not mix with early morning education. For the most part the



A complete golf hole with green, tee, fairway and water features was constructed inside the Morial Convention Center

speakers were good and I picked up at least one tip from all 10 of the presenters. Perhaps this session will be reduced to one day in the future to enhance attendance and ensure valuable topics.

The opening session was the highlight of the week for Wisconsinites as our very own Monroe Miller received the Colonel John Morley Distinguished Service Award. Monroe is very deserving of this award named after the founder of GCSAA for his selfless donation of time and talent to the industry. (For more on Monroe's career see the Personality Profile in this issue.)

The opening session finished with PGA Tour Player Paul Azinger who gave an inside look at the techniques he used to lead the United States to Ryder Cup victory. Azinger spent time analyzing his team-members personalities in order to put similar players together in pods to allow for greater teamwork. Paul also discussed how he was clear to give ownership of the team to the players to bring out their best.

I fought the urge to go to the opening of the trade show and the early gifts (payola) that goes with it to attend the "Changing Face of Golf" session given by

Renee Powell LLD. Renee is one of only three African American women to be on the Ladies Professional Golf Tour. Growing up on a golf course she learned to play the game as she learned to walk. Renee's father Bill Powell had a successful college golf career but was disappointed after college to find he could not get on most golf courses because of his color. Rather than give up, Bill choose to build his own course with help from family and friends. Clearview Golf Course in East Canton, Ohio is the only course in the world built, designed, owned and operated by an African-American. Clearview has been designated a Historical Site by the United States and State of Ohio.

Renee gave an excellent talk not only on her family history and career on tour but also on the need for all golf courses to reach out to welcome newcomers of all races into the game of golf. This was a great session in both education and entertainment. I was disappointed there were not more members in attendance to take advantage of this opportunity. More information about Renee's family can be found at clearview-gc.com.

My head was already full of new information but I had



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