

MICHIGAN STATE'S DR. DAVID GILSTRAP: NO HOLDS BARRED ON THE SPORTS TURF INDUSTRY

***Editor's note:** Dr. David Gilstrap has been teaching turf students at Michigan State since 1993 and after 21 years he is stepping down as coordinator of the 2-year turf program having been a major influence on many of the most successful turf managers working today.*

SportsTurf: What have been the most significant changes in turfgrass **education** you've experienced in your years at Michigan State?

Gilstrap: As far as formal education, the most significant changes have occurred in classroom technology and the methods by which instructors are expected to teach. Early on, I used transparencies or the blackboard, and the students had to take notes. Now, my PowerPoints are posted on the web so that students can print them off ahead of lecture and use to them to take notes. Fewer and fewer of them seem to be even doing that, however.

Now, unless you're taking attendance or giving pop quizzes, more and more students simply don't come to class, and it's only on exam days that you realize how large of a class it is. The fact that during lectures you are elaborating on the presentations, having meaningful discussions, and perhaps giving additional testable material doesn't matter to many students when you are spoon feeding them otherwise. From my perspective, I feel that we don't have as many outstanding students as we used to, and that the overall quality of students has declined over the past several years.

ST: What have been the most significant changes in turfgrass **maintenance** you've experienced in your years at Michigan State?

Gilstrap: From my perspective, it's been the increased expectations of sports fields, both in appearance and playability. This, in my opinion, has been urged on by the turf managers themselves who have shown just how good athletic fields can be. Learning and adhering to the basics can carry you a long way.

Now it's at the big-time stadiums that field maintenance has evolved to an elite level of expertise that is specific to us. I mean, that's not a golf course that had to host back-to-back major, major events like the Rose Bowl does this year. And, except for Willie Nelson's, golf courses aren't used for concerts.

It's also at this level, and we're speaking of my particular expertise, that fungicide use has become rampant. On a per unit area, there are MLB teams applying more fungicides than even golf greens get. The manager's rationale is "It's a relatively small area, I'm not that good with diseases, and I can't afford a screw up." I know that we're talking about enclosed areas, but this is Kentucky bluegrass and perennial ryegrass or bermudagrass—not creeping bentgrass and annual bluegrass, both of which are much more disease susceptible than Kentucky or bermuda.

ST: What's been special about your program?

Gilstrap: It was the first program to focus primarily on

▼ Heather Nabozny, left, head groundskeeper for the Detroit Tigers and a former Gilstrap student, with David at Comerica Park in 2008.





▲ **Left:** Dr. Gilstrap with his family in 2012; from L to R: Madeline, Paula, Katy, and Harry. **Middle:** Slappy Gilstrap performing at Willie Nelson's Fourth of July picnic in 1978. **Right:** Preparing for a calibration lab class circa 2003.

sports turf management instead of golf. And, I'm not sure but it still might be. The program's roots date back to 1989 when the owner of the Detroit area Toro dealer at the time, who had also done quite well operating the Barefoot Lawn franchises in Michigan, donated money. The program was christened the Lawn Care Technology Program and the idea was that lawn care companies would send their employees to MSU for education and training. Its coordinators, in quick succession, were Drs. Roch Gaussoin (now at Nebraska), Eric Miltner (formerly at Washington State and now with Agrium Advanced Technologies) and Paul Rieke, who changed the program's name to Lawn Care/Athletic Field Maintenance.

I took over in 1993 and quickly realized that the only hope for the program was to shift its focus to sports. The only lawn care students were those who already had their own small lawn cutting businesses going and wanted to learn more about turf, mainly applying fertilizers and spraying herbicides. That's been the case over the years with the last person having interest in lawn care having graduated about 5 years ago. As far as the original plan for this program, no lawn care company ever sent an employee to MSU.

As part of my vision to put athletic fields in the program's forefront, its name became Sports and Commercial Turf Management in 1996. Enrollment grew over the years to about half what was in the 2-year golf program, whose numbers were declining since its heyday during my first several years at MSU.

ST: How did this favorable work environment develop?

Gilstrap: There are several reasons for this. The first is that being a sports turf manager has become recognized as a profession rather than a vocation. The second is the success of minor league baseball, especially when ownership realized that there were college graduates (and interns) who had specialized in taking care of their fields. And, they could be hired for not that much more than they were paying former lawn care employees or school janitors on summer break. What they didn't know is that it would cost much more to retain the good ones.

Another reason is that field conditions, especially when they were poor, were getting more attention at the MLB and NFL levels. Disgruntled owners wanted things fixed, and GMs figured out they needed to hire college educated, experienced professionals. This led to favorable publicity for sports turf managers who were successful and who usually credited their education as being a key asset.

Consequently, more people began considering sports turf as a pos-

sible career. And as the number of students increased, the more interns there were, the more graduates, the more resumes being circulated, etc. This has caused upward pressure to hire those with college educations. Routinely, job postings specify such among the qualifications needed, particularly at the upper echelons of our industry.

Now I have many good friends who came up through the ranks without having formal turf educations, and I value their opinions and appreciate all the good they have done. However, they are contrary to what I have tried to accomplish, and I've told many of them exactly that, hopefully in a good-natured way. I can especially tell if they agree with me when they ask how much it would cost for their son or daughter to go through my program. If they're from out of state, the conversation moves to another topic.

ST: What role has STMA played?

Gilstrap: Students are of course interested in scholarships, but we have much fewer available than does the golf program. In state, the Michigan Turfgrass Foundation has a big one designated for sports turf students, and MISTMA does the best they can. Over the years, my program's students have done well with the SAFE scholarships, and that recognition and support is greatly appreciated.

Also, the Annual Conference and trade show is a great benefit to the students. And while the Student Challenge contest seems to be important to some attendees, I've never tutored the students beforehand, and I certainly haven't wanted them studying in their hotel rooms, when they could be out networking and generally having fun in the manner that many college students enjoy.

ST: What are some of the biggest challenges facing sports turf managers today?

Gilstrap: Besides traffic and Poa, I would say it's keeping up with all of the regulations and associated paperwork so that you and/or your organization doesn't get cited or sued.

ST: Can you speak to internships and how they have evolved?

Gilstrap: Internships are the cornerstone of any turf management program. Our golf program already had the model in place, which was that our spring semester courses were shortened so that our student could be on their internships at the end of March. This has and still gives us an advantage in that they get to be there before the season begins, as in professional baseball. Then, typically by the time any interns from other programs show up, our intern already has 5 weeks of training.

At first, there really weren't any internship in sports turf, so I had to procure them one by one. All along, I knew that most of the best ones would be in professional baseball since the dirt work was an art and not something we could teach them in classes. Also, there would be long hours that they needed to experience to know if they really

wanted to do sports turf as a career. After several years, my grads were getting good positions and they wanted interns. Many of them wanted to provide a better internship than they themselves had had.

My students used to have many choices about where to go, but with other programs competing for them, this isn't so true anymore. This brings me to a problem I have with some places hiring several interns, in some cases more than ten, and working them in shifts to avoid paying overtime. While I can certainly understand this from a business perspective, the students aren't getting the true experience of being one of the first to get there and last to leave, so to speak. Consequently, they really aren't finding out what they would be getting into career-wise.

ST: Which former students have attained the most notoriety in sports turf management?

Gilstrap: It has to be Heather Nabozny, who graduated in 1994 and became MLB's first female head groundskeeper with the Tigers in 1999, and 2008 grad Greg Elliott, who now has two rings (and big playoff checks) from being head groundskeeper with the San Francisco Giants. Both of them went straight to the big leagues from Class A teams. The 2012 World Series was the first time that both head groundskeepers were from the same program. They were set to reunite in SF if the series got to six games. I had USA Today and Fox Sports cued up, but the Tigers got swept and that story died.

ST: What can sports turf managers do to continue advancing their professionalism in the eyes of the public?

Gilstrap: They need to be more active in their communities. Reach out to local service clubs, who are always looking for speakers. Make a brief presentation and then field countless questions about caring for a lawn. Get to know reporters and give them your cell phone number. Wear clean clothes and be well groomed in case the cameras are rolling. Basically, promote yourself and you'll be helping market your organization. Your bosses will love it, and hopefully you'll be rewarded.

ST: How did you get into turf?

Gilstrap: Well, it took awhile since I spent 15 years trying to make it in the Austin music scene. One of the many day jobs I had was driving a cab, and by happenstance it led me to an interview with a statewide lawn and garden distributor. I had gotten a general ag degree from a small cow college in Texas, which enabled me to know somewhat about growing things. So, after a 15-year hiatus, I had a full-time job and said goodbye to the nightlife.

I started out packaging vegetable seeds and then moved into sales. In looking through the catalog, I noticed several products that could be sold to the golf courses I'd been playing while a musician. I had success and garnered enough pull with the superintendents (mostly Aggies) to be elected to the board of the Texas Turfgrass Association.

At my first meeting, Dr. Ed Runge, head of the Soil and Crop Sciences Department at A&M, apologized for not yet finding a suitable candidate for the fellowship that had been recently created by the association. Feeling I needed another change in my life, I retook the GRE that I had first taken 17 years earlier. The results indicated that perhaps

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HOW TO GET THE BEST PERFORMANCE FROM YOUR CREW

***Editor's note:** We asked some prominent professional baseball head groundskeepers how they lead their crews to get maximum performance on the diamond. We heard from: Keith Winter, Fort Wayne TinCaps; Britt Barry, Dayton Dragons; Bill Deacon, New York Mets; Luke Yoder, San Diego Padres; and Greg Burgess, Greenville Drive. Here are their responses:*



▲ **Left:** Seattle Mariners' crew in action during an STMA Regional Conference in 2012. Photo by Anthony Murillo.
Right: Crew painting a logo at TD Ameritrade Park in Omaha. Photo courtesy of Dan Blank.

SportsTurf: How do you manage workers' expectations of the job?

Winter: In the hiring process, it is important to find out what the applicant's perception is of the job. In professional baseball, the "grind" is a reality I bring up early in all interviews. Education and work experience are important, but work ethic, perseverance, and a clear vision of what the job is about are just as important.

Barry: Before the season begins, we hold a meeting with the crew. We get pizza and

hand out crew shirts for the year. At this time we go through the expectations of the season, for example what to improve from last year, changes for this year, etc. This way everyone is on the same page moving forward into the season.

Deacon: When we hire someone or promote someone I sit and talk with them about what I expect from them, what the organization expects and we try and be realistic; it isn't all fun and good times there are going to be things that you have to do that you won't like. For me the good outweighs the bad and I try and make it the same for

our employees. I couldn't imagine going to work unhappy all the time.

Yoder: It is all about communication in the beginning prior to a hire. We do our best to give them worst case scenario. During the interview we leave out the "fun" parts or desirable aspects of the position. One question we ask is, "Will you clean the toilet?" even though they won't be doing that. It allows us to get a good read if someone thinks they are above certain tasks. We try to be clear on exactly what they will and will not be doing on the field. We then tell them that no matter if they are doing a particular job or not they can observe, ask questions, and see exactly how we perform a certain task which allows them to still learn. We tell them that in the end if they give it their all and come through with what we agreed on that we will go out of our way to give them a good recommendation.

Burgess: I address all expectations to members at the beginning of each season or their employment, and continue to touch on them often during pre-game meetings.

SportsTurf: How do you provide challenges for the crew?

Barry: We are fortunate enough to have a veteran grounds crew here with the Dragons. Most of the crew has been through almost every situation that occurs during the season. This helps to give the new members of the crew different tasks and challenges to gain experience in all areas.

Deacon: I believe in letting people work and make decisions. I do guide people and try and help them make the best decision possible but I believe the best way to challenge them is to let them work and not stand over them. I like to give them some freedom and then we go back and check and make sure things are done properly. I try and make it easy for them to come to me with questions; some employees are just naturally more comfortable going to one of my assistants so we also encourage that, the bottom line is getting the work done to the

best of our ability, and I believe people work better with a little freedom. We also try and rotate the work around to an extent so that all crew members know how to do more than one thing.

Yoder: We make it clear that we expect detailed, consistent results every day. We show them what we want and check on their work daily. The results we expect don't come easy. When we give them a timeline for their tasks to be completed this turns it up a notch for them to come through. The fact that it is an 81-game season is a challenge in itself to maintain quality day in and day out. Not to mention we have more on field events than Padre games.

Burgess: For the entire crew, full time, seasonal, or game day, I like to mix up the job responsibilities so they become skilled in all tasks we normally perform. I've seen this

pay off when we are in a crunch. It makes my job easier when crew members are not restricted to only one or two tasks. They welcome the change of pace with doing something else as most responsibilities can get monotonous in minor league baseball.

Winter: After proper training and a period of acclimation, I try to make an area(s) of the field "their own." This quickly gives new crew members a sense of entitlement and establishes ownership and pride in what they are doing. A communicated goal is to make the field as good as it can be each and every game on the schedule. We literally "compete" (against the weather, the calendar, fatigue) each and every day.

SportsTurf: How do you foster their strengths while managing their weaknesses?

Deacon: I think the first step is recognizing

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ing people's strengths and weaknesses; not everyone can do everything. Communicating about weaknesses can be a hard conversation to have but it is necessary. At the major league level it can be difficult for people to improve on their weaknesses because we can't let it affect the finished product. We do our best to let people try new tasks when the team is on the road or during the off-season, the delicate balance is you also don't want someone who is very good at a particular task to feel like they are no longer needed for that task; that is why I am a big proponent of rotating tasks and rotating shifts to an extent.

Yoder: If we find someone who is above average when it comes learning quick and being detailed-oriented we may be more inclined to put them on edge work or mound maintenance. If we get an individual who is mechanically inclined and good with equipment we may use them in that area. When time permits we will take advantage of that to teach and lead by example what we are looking for in order to help offset a weakness.

Burgess: I make sure I compliment their good work and help them find ways to better their weaknesses. We wind up hosting a lot of games and events so they get a chance to work on these weaknesses throughout the season.

Winter: Having raised three sons and coaching various sports at various ages for nearly two decades, I believe I have developed an eye for talent. I hire based on an individual's strengths, and wait for the weaknesses to arise. Once they are evident, I work to "coach" them through it either physically or emotionally.

Barry: Before each game, we have a list of pre/post game duties for the guys working that night. We learn who does what duties best, and who needs work in certain areas. If someone is struggling in certain areas, we put them with someone who excels in it which benefits both individuals.

SportsTurf: What do you find motivates most crew members?

Yoder: The fact that if they want to thrive in this industry a good reference goes a long way and visa versa. They come in here and knock it down for us we will help them find a job. We also let them know that if they are just an average worker and we ever get a call asking about their performance here we give our honest opinion.

Burgess: I take great pride in what I do and the product we put out on the field, and try to motivate by example. I make sure my crew knows they are a part of the product and if you take pride in what you do, you will see it. They develop the eye and the desire to make everything "perfect."

Winter: I think that clear cut expectations, consistency in person-

ality and management techniques, and the competition to have the best field possible, motivates my guys. I also outfit them with the best game day uniforms possible, do all their laundry, and "love on them" as much as possible. If they know they are cared for as a valuable part of a team, they will perform.

Barry: Motivation is easy to find early in the spring when the season is just starting. As the grind of the season wears on, it can be difficult to keep the crew pushing through the heat of summer. Being appreciative to the crew for their work is a major key to success. Compliments on their work, constructive criticism, and a simple thank you for their hard work goes a long way. If they are proud of the work they do, and look forward to improving it, the final product will be better.

Deacon: I think different things motivate different people. We have a union grounds crew so we have some guys that are motivated simply by the paycheck and overtime, and we have guys that are motivated to move into a position like mine. When we hire now that is what we look for—people that are motivated to move forward and move up, they seem to do the best job.

SportsTurf: How do you get everyone to work together?

Burgess: It helps when all the crew knows the process we use to get through a game day, pregame prep, post game prep, sod projects, etc. When the crew understands the processes, they run a lot smoother.

Barry: Success on the field revolves around working together. One of the biggest keys to that is communication. Keeping the crew informed on the daily schedule, what needs to be done, and who is doing it helps things run smoothly. Communication increases efficiency. The more efficient your crew is, the less tensions rise, and the easier it is to work together.

Deacon: We try and make everyone aware of what is going on and what we are trying to accomplish, this includes letting them know what events will be going on besides baseball. I don't think people like surprises, sometimes things come up and we adapt but I think the more everyone knows what is going on the easier it is to work to a common goal.

Yoder: First of all we go out of our way to interview and double check references for all new hires to not only find out if they are going to be a good worker, but just as importantly a good people person that can adapt well and get along well with others. The only option for all crew members is to work well together. We let everybody know that if they don't mold well or fit into our existing operation and the chemistry involved, that they won't last long. I value my crew and the long-term veterans and if they have a problem with someone, then I do too, and either [the problem] gets rectified

pronto or they gone. We simply do not tolerate anybody rocking the boat in anyway.

SportsTurf: What working environment or culture have you found works best to get a great crew?

Winter: Again, consistency is key to the work environment. There are few surprises when they come to work. They know it will be a safe place that is free of drama, bickering, and backstabbing. We communicate honesty and openly, and do it “right now.” A great crew starts with great people. Great people are only found in a thorough, methodical hiring practice. I work to find individuals that fit our mold and motto, which is, “Hard work often times can be a substitute for knowledge, but rarely does knowledge serve as a substitute for hard work.”

Barry: Again, we are blessed with a great crew here in Dayton. Each crew has a different personality, and functions differently as a whole. There is not one proper way to manage every crew; it depends on the personalities of the manager and the crew. We have a pretty laid back environment here. The crew knows what to do, and how to do it properly. Jokes are common, but hard work is as well. I believe this keeps the morale up and the job fun, which helps to create the best product possible for the team and fans.


Deacon: I think you have to be fair, honest and approachable. The job has to be enjoyable, which can be difficult, but you also can't sacrifice the quality of work for a good time. You have to remember the old saying “you can't expect someone to do something you wouldn't do yourself.” I also believe it is important to acknowledge when people do a great job.

Yoder: A ‘lead by example’ operation and also a sense of ownership works best. By assigning crew members a specific area of our operation that they are responsible with their name on it creates a sense of pride and tends to get the extra mile out of an individual. We don't simply tell someone to do a job for the

first time or give them an assignment unless they have seen it demonstrated from someone who has done it 100 times before.

Burgess: All positive. Good or bad, I try to have the crew looking forward and how to better any situation and not dwell on

anything too long. If one person keeps a negative spin on things, it will bring everyone else down. I also try not to keep everything as employer and worker. I want to know about each member personally because as we go through the year, we all become a family. ■



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HIRING THE RIGHT PERSON

The process for hiring a new employee can be difficult and time consuming, usually takes a lot of preparation and work, and depending on the position it can have major ramifications for your staff. Having a plan and outlining the steps will go a long way toward being successful. I have outlined some steps that will hopefully cause you to think about the hiring process a little differently and provide assistance.



▲ **Bill Griffith**, Walla Walla CC, Walla Walla, WA

DETERMINE WHAT YOU NEED

What are your strengths? How do you spend your time? What are your weaknesses? Try not to duplicate your weaknesses in a new hire. Hire someone that is strong in areas that you are weak. Hire capabilities, not credentials or qualifications. "This guy must be good; he worked at major league ball club and has a master's degree from Penn State."

Should you use a job description as part of the hiring process? You are hiring a 3D person, so be careful about using a 2D resource. How im-

portant are the qualifications? How do qualifications, certifications, prior education, etc. fit into the role you are looking for the hire to fulfill?

How important is the attitude? Maybe the key is, "It's not what you know, but what you are willing to learn." Be very clear about your expectations. What role are you looking for this person to have on a day-to-day basis? Is hiring Superman really possible? Move from the conceptual to reality. Are you looking for the right person, or a resume? How do character, personality, prior education, etc., rank in importance in a new hire? What do you think the future goals should be of the person you are looking for? Is this a long-term position, transitional or career-building?

Make a list of the capabilities you are looking for. Things

like qualifications, certifications, prior experience, attitude, communication skills and teachability might be some areas to look at. Prioritize those capabilities.

DETERMINE HOW TO INTERVIEW

Select the interviewer(s): In addition to the immediate supervisor, there may be individuals with whom the candidate will interact who should also be part of the interview and selection process.

Identify selection criteria: The interviewer(s) should review the responsibilities of the position and reach agreement on what education and experience requirements are necessary, as well as the required behavioral qualifications (e.g., communication skills, teamwork, customer service).

Review cover letters/resumes/applications: Using the selection criteria, the interviewer(s) should carefully review the application materials to determine which candidates should be interviewed.

Develop appropriate questions: The interviewer(s) should develop job-related questions that will be asked of all applicants to probe their education, level of related experience, and other attributes required for the position. One great strategy is to look at other companies that have top performers and learn what makes them top performers. We network with our peers about other practices, why not hiring? What are the key factors you are trying to discover? Select and prioritize the key things you are looking for in a new hire. What are the key factors you need to disclose? What are the key things about your organization and you that you need to disclose to endure a good fit?

ASKING THE RIGHT QUESTION

Here are some good general questions:

- What do you expect from a manager? What can a manager do to help you stay motivated?
- Tell me about a situation where you were able to have a positive influence on the actions of another person? What did you do?
- How do you motivate yourself to do something you don't find enjoyable or really don't want to do?
- What do you do when you make a mistake? How do you handle it?

- Have you ever dealt with a manager's policy you weren't in agreement with? How?
- Share an example of how you were able to motivate employees or co-workers.
- Have you handled a difficult situation with a supervisor? How?

QUESTIONS THAT HELP DETERMINE ATTITUDE

- What kind of people have you found it difficult to work with? Why?
- Describe a situation where you were in the wrong, and others knew it. What did you do?
- Tell me about an instance where you had to work with an angry user. What was the problem? How did you resolve it?
- What has caused the most pressure for you in a work situation? What did you do about it?

QUESTIONS THAT HELP DETERMINE PERSONALITY

- What circumstance brings you here today?
- How would your best friend describe you?
- What would you say are your two greatest weaknesses?
- Sometimes, it doesn't hurt to throw a very abstract question into

the interview to see how the person responds, such as "Why are there interstate highways in Hawaii?"

QUESTIONS THAT HELP DETERMINE LEADERSHIP

- What is the difference between a leader and a manager?
- Describe the best boss you have had. How would you define the qualities of a good manager?
- Tell me about a leadership experience that did not go as planned.
- Describe some of the circumstances under which a leader can fail.

QUESTIONS TO HELP DETERMINE WORK ETHIC

- Who is the most successful person you know in our industry, and why do you think he/she is successful?
- Describe your work ethic.
- How many hours a week do you think you need to get your job done?
- Have you been in a situation where you didn't have enough work to do? What did you do? ■

Bill Griffith is a turf management instructor and advisor at Walla Walla Community College, Walla Walla, WA.



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SELECTING TURF ADHESIVE IS CRITICAL: Q&A WITH NORRIS LEGUE, AKA GURU OF GLUE®

Editor's note: Norris League is president of Synthetic Surfaces Inc., which manufactures synthetic turf adhesive products

There is no such thing as a “one size fits all” adhesive because an adhesive that is outstanding for one application might be a disaster for another. There are hundreds of adhesives on the market and some are excellent for one application and unsatisfactory for another. When a person asks, “What’s your best adhesive?” it shows the person has little knowledge of the complexity of adhesives. For example, that’s why the designers of first-aid “band aid” type adhesives do not want the adhesion to be

▼ Stand-up Trowel

so strong that it tears the skin when being removed. Oppositely, instead of stitches, a surgical adhesive that is designed to hold skin together after an operation must not prematurely peel away or break.

Q: Are there many different types of synthetic turf adhesives? If so, what are their differences?

Legue: That narrows it down, but it’s still a very broad subject. For example, there are adhesives for use outdoors vs. indoors; adhesives for recreational surfaces like synthetic turf athletic fields and playgrounds vs. synthetic turf adhesives for aesthetic purposes like landscaping, lawns, highway median strips, roof tops, etc. [Buyers] need to look beyond price as well; higher performing adhesives can withstand athletic activities and weathering and prevent the need for repairs later.

Q: What is your opinion on outdoor synthetic turf adhesives for installing and repairing synthetic turf athletic fields and playground surfaces?

Legue: Weather varies from hour to hour, day to day, with different seasons and different climates. Hence, the adhesive selected should not be a “fair weather only” adhesive because there will be a very limited installation and repair time window. Since time is money, unnecessary delays created by using “fair weather only” adhesives can be very costly.

Furthermore, selecting an outdoor adhesive based on indoor laboratory test results *after* the adhesive has cured is a waste of time.



◀ Left: Airless Spray Center: Glue Box Right: Squeegee

During installation, in very cold or very hot weather, a good outdoor adhesive should prevent the turf from moving due to wind lift, edge curl, creep, wrinkling, buoyancy from unexpected rain, expansion and/or contraction due to surface temperature changes from sunlight, shadows, passing clouds and so on. Furthermore, selecting an outdoor adhesive based on indoor laboratory test results *after* the adhesive has cured is a waste of time. The first important thing is installation in variable weather and after cure, then long-term exterior durability.

Q: What different types of adhesives for synthetic turf are used commercially today?

Legue: They are hot melts, one and two-part liquid solvent-free urethanes; one-part and two-part solvent-based urethanes; two-part epoxy and one-part solvent-free silane/silicone based adhesives.

Q: Of those, which type is most often used for synthetic turf?

Legue: It's one-part urethane adhesives by far, but the word "urethane" is like the word "metal." Just as there is a big difference between gold, zinc, cobalt, lead, iron, uranium, tin, aluminum, etc., there is also a big difference between adhesives that fall under the word "urethane". For synthetic turf, some give disastrous results and others, in our opinion, are far superior to other adhesives.

Q: Can you narrow down the type of urethanes that make it easier to install synthetic turf and those that are the opposite?

Legue: Relatively speaking, one-part liquid urethanes that are both solvent-free and with high isocyanates (NCO) contents above 9% have a host of installation problems ranging from crystallizing (turning solid) at about 50° F and not re-liquefying when warmed; to foaming in high humidity; to slow cure in low humidity; to negligible tack and "grab" to prevent turf movement during installation.

Oppositely, many solvent containing one-part urethanes with low NCO contents, enable turf installations ranging from freezing to hot desert temperatures; they do not crystallize on cold days; do not foam on humid days and do not stop curing in dry desert-like conditions. Installers don't have to "baby sit" them during installation.

Q: How do you find a synthetic turf adhesive that is suitable for an application?

Legue: I suggest contacting adhesive manufacturers and ask for literature and a MSDS sheet. If the information received is weak, ask about some of the points I've made here. Don't accept a verbal sales pitch or buy solely on low price. ■

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FROM THE GROCERY STORE TO SPORTS FIELDS: HOW AN IDEA CAN MOVE

Do you waste time every day meeting with your crew on what needs to be accomplished each day? Do you text message instructions on who needs to do what and when it needs to be done by? Does your staff always wait on you for things to do? If only there were a way to reduce the times you answer, “Yes!” to these questions? Well, not surprisingly, there’s app for that.

It is funny sometimes where you get ideas, or how a small idea can grow into a completely different application than it was originally intended for. I was at the grocery store one Sunday afternoon to pick up a few things, and like all good husbands, I texted my wife to see if she needed anything else. While pacing several aisles waiting her reply, I ran into my sister-in-law doing her weekly shopping for her family of six. When I told her I was waiting

on her sister to text me back, she laughed and said, “You don’t have an app for that?”

She began to tell me about an app that allows multiple users to access, edit, and check off items a shared list. She said it is the perfect “fix” because her kids can all use the shared list and add the items they need. So I immediately headed home and downloaded an app to my and my wife’s phones so we could begin sharing a list. I soon began to wonder if I could use this digital grocery list as a to-do list at work.

There are several shared to-do list style applications in both the Apple App Store and the Android Google Play market places. These applications allow users to create or upload lists, edit tasks, check off completed items, and even assign task to specific persons. Several of these apps are free to download and have the ability to purchase upgrades, such as Our To-Do List, SimplyUS, Wunderlist, and GTask. If it works for making sure your spouse helps get the grocery list done, why can’t we use it in the turfgrass industry?

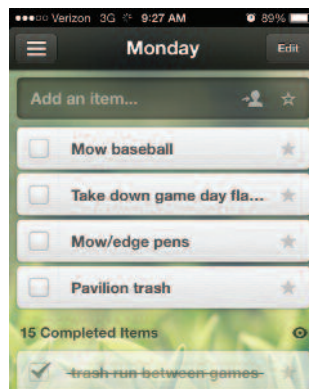
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Brant Williams, CSFM, CPTM, is Manager of Athletic Facilities for Dallas Baptist University.



► A screen shot of the Wunderlist app.



WHAT APPS DO YOU USE?

SportsTurf magazine is compiling a list of smart phone or other handheld device or laptop computer apps that turf managers are using today. Email us with a short description of the app and how you use it and we’ll list them in an upcoming issue. Thanks. Email the editor at eschroder@specialtyim.com

Main image ©istockphoto.com/cybrain

Continued from page 19

I had not damaged as many brain cells over the years as I had feared, so I applied and was awarded the fellowship and studied under Dr. James Beard. I found a copy of Turfgrass Science and Culture at a used bookstore, read it from cover to cover, and realized that I had a latent turf gene that was now being expressed.

ST: What about going to grad school as an older student?

Gilstrap: Well that I certainly was since I had just turned 40! The R. C. Potts Fellowship paid \$15,000 a year, and while it was a significant pay cut for me, I was able to afford my own apartment and a bicycle. All I did was study except for going to the Dixie Chicken for Friday happy hour. I approached grad school like it was a full-time job.

The fellowship also paid for up to 15 credits tuition per semester. So, I foolishly signed up for a full load my first semester. It was only later that I found out that most grad students only took two or three courses at a time. Anyway, after the first round of exams my highest score was a 76, so I really put the work ethic in play and ended up acing every course. Dr. Beard couldn't believe it and really took an interest in me after that, which still exists to this day and for which I remain most appreciative.

Dr. Beard retired in 1992, so I hold the illustrious distinction of having been his last grad student. You might say it was me that drove him out of academia.

ST: Do you want to tell us a little more about your other life before turf?

Gilstrap: Sure, at least what I wouldn't mind my kids knowing if they end up reading this. I was the lead singer in a high school combo. We played mainly soul music and some early Stones and stuff like that. Besides school dances we had a good job playing at Gulf gas station grand openings in around Arlington and Ft. Worth. I started banging on the guitar when I was going to UT in the late 60's and got good enough to play along at house parties.

I transferred to Tarleton State University since my parents had bought some land west of Stephenville. I lived in a run down farm house and really only traveled the 18 miles into town to attend classes and sell firewood I had cut. So, it was there that I started writing songs. I would go back down to Austin from time to time and sing them to anyone who would listen.

After graduation, I took a job with a seed company up in the panhandle. Feed lots and sugar beets were big business and the aromas masked each other so that it smelled like a cow had eaten a Hershey bar. One day I got a call from Austin informing me that Jerry Jeff Walker was going to record one of my songs called "Ro-deo-deo Cowboy," and that I should think about getting back down there and getting my own thing going.

So, I quit my job and did move back to Austin. Jerry Jeff did record my song, albeit 5 years later. Anyway, it was the heyday of the cosmic cowboy, and I also got to know pickers like Willie, Doug Sahm, Michael Murphy, B W Stevenson, Jimmy Dale Gilmour, Joe Ely, and all the musicians, roadies, groupies, and assorted hangers on. The blues scene was emerging also, so I got to know many of them, too, including the Vaughn brothers. Along the way, several more of my songs were

recorded by me and others, but I only had the one that got on a major label, so far.

In later years, I joined Alvin Crow and the Pleasant Valley Boys and we played all over Texas, Oklahoma, and Louisiana. Then, I took a job as Jerry Jeff's stage manager and got to travel to 38 states until that fateful cab fare got me off the road.

ST: How did you get the job at MSU?

Gilstrap: While at A&M, I thought I could use some of Beard's connections in France and Italy hoping to land a job as a grow-in superintendent. Because of his retirement, I got to teach a course for non-turf majors called Recreational Turf, which would later have as many as 1,500 students a year and would also serve as the model for my World of Turf course here at MSU. MSU was advertising for two positions, one was Environmental Education Specialist (which Dr. Frank Rossi, now at Cornell had just left) and the other was the lawn care program coordinator. I was invited to interview in February, which I thought would be good since, as a native-born Texan, I thought I needed to see how bad the weather really was up there.

I did a 2-day, intensive interview for the first position and gave a seminar. Then, I turned around and did the same thing for the second position, except this time I met with the lawn care constituency rather than the golf people. I was 45 by then, so I suspect they wanted to see how I held up for those 4 days. I even stayed over the following weekend since I wanted to get more of the feel of East Lansing.

I had expressed my desire to go on for a Ph D, and after the interviews were completed, Dr. Bruce Branham (now at Illinois) said that wouldn't be possible if I became the environmental specialist. This was because it was an extension-type job where I would be out working with the state's golf courses and wouldn't be able to complete my course work. However, if I was interested in the lawn care position, then perhaps I could start grad work after I got the program on its feet.

Earlier in the year, I had interviewed for a sales position with Milorganite and a teaching position at Horry-Georgetown Technical College in Myrtle Beach. However, each March here in Michigan, I think about whether I'd been better off in Myrtle Beach. I had standing offers from both of them, but they each said they would wait until I had interviewed in Michigan. In early March, I was offered the coordinator position. I thought of it as having been with the Rangers or Astros and the Yankees wanted me.

ST: And you didn't get your Ph. D. until you got to MSU?

Gilstrap: Yes, and it took quite awhile. Turf pathologist Joe Vargas was my major professor. He and Beard had a great friendship that started back when Beard was at MSU in the 70's. Back when I was in sales, I had developed an interest in diseases and fungicides, which were very expensive. And I knew I could deliver a higher-priced order with just my pickup. I knew from listening to Vargas give talks and then later interviewing with him, that he and Beard were very different in personalities and approaches toward life. So, in my mind I thought if I could synthesize some qualities from two giants in the turf industry, I might end up with something pretty unique. Vargas

agreed to sponsor me, and the fact that I didn't need a stipend or tuition paid for probably helped that decision.

During my first fall in East Lansing, I met Paula Manderfield. She was a district judge, and we were married within 2 years. We then had three children, with the last two being twins that required my wife to be on bed rest for the last 5 months of the pregnancy. So, I was caring for her and our 18-month-old daughter. Then, about a year after the twins were born, she decided to run for circuit court, in which she came in first against two incumbents and a sitting state representative. I had never been in a big campaign like that, but think goodness she had. It was a great experience, and I think my 2 years I'd worked as a roadie really helped our drive and perseverance.

So, all along I'm taking a course each semester and putting out treatments all summer and fall. Vargas's grad student ahead of me, Rob Golembiewski, now with Bayer, was in the process of documenting the first instances of dollar spot resistance to DMI fungicides and how to manage it. I helped him finish up and then started a study to try and determine how long it would take for the same resistance to develop in a virgin sward, so to speak.

After 5 years of spraying Banner at 4x rates four times a year, I did see enough of a shift that my committee approved me going forward with writing my thesis. After awhile my wife said she was tired of hearing about it and that I should either get the thing done or forget about it. With that blessing, I focused on my writing and often slept in my office when I was on a roll.

Looking back at the qualifying written and oral exams, and especially at the oral defense of the thesis, I think that getting through the process, particularly for a terminal degree, is a form of intellectual hazing. At any rate, I finally got my Ph D in 2007, and 6 months later I doubt if more than a handful of people in my department even knew what I had done it on. At any rate, I had finally joined the club, so to speak, at 59 years of age and I'm glad I persevered.

ST: What accomplishments in your career make you the most proud?

Gilstrap: My first answer has to do with the successes of my students both on and off the field. Back in 1993, there were only a handful of people in sports turf that I knew had formal turf educations. So I began my quest of putting more of them into and onto the field. By the early 2000s, I was making the claim that MSU had more graduates in the industry than all the other states' programs combined. While this is no longer the case since nearly all the other turf programs have and have had at least some sports turf students, I will say that MSU still has the most out there.

Also, I volunteered to be the director of our dual degree program with four Chinese universities. I took it from its inception in 2003 through graduating its first class in 2008. It was our university president's idea and she chose turf to be the guinea pig. It's still going on and has more than 400 grads, some of which are actually working on golf courses in China.

Finally, I'm still continuing to research the bermudagrass that was brought to MSU by W. J. Beal as part of the nation's first turfgrass research in the 1880s. It's now spread throughout the campus and looks

quite good where it's mowed regularly and fertilized. The cultivar has been documented in the scientific literature as being the most cold tolerant. Through DNA fingerprinting, I've discovered that it is a clone. This means it has the potential to be patented, and I'm working toward securing the funding to do that.

ST: Do you have any major career disappointments?

Gilstrap: Sure I do, and not being able to recruit and graduate more students tops the list. My incoming class sizes ranged from eighteen to six. My graduating class size ranged from twelve to five. I had greater attrition with the larger groups because I wasn't giving all of them the attention they needed. With the smaller classes, I did my best to make sure none of them fell by the wayside. Also, I regret not leaving a program big enough that it necessitates its own coordinator, instead of the shared model it's going to.

ST: Is there something you wish you had done that you did not?

Gilstrap: I know I should have published more, but I was lazy in this regard since it didn't count much in my year-end evaluations because I didn't have a research appointment.

ST: What are your plans in retirement?

Gilstrap: First, of all I'm not retiring! My kids are 16, 14, and 14. So, how can I? Instead, I'm moving to a 9-month appointment with my primary duties being the teaching of an online course entitled World of Turf, which I designed and developed it for non-turf students across the campus. Enrollment numbers have grown remarkably since I shifted the format to an entirely online offering. In fact I have 300 students taking the course this spring.

ST: What about the program's future?

Gilstrap: Coordination of the sports turf program will transition to Dr. Trey Rogers, who has been in charge of the highly successful 2-year golf turf management program since the late eighties. Dr. Rogers has been a leader in sports turf research having pioneered and perfected the portable field concept. He has assured me and wants all of our graduates to be secure in knowing that the two programs will remain separate, and that the only change that may take place is that the commercial turf part of the program's name may be dropped, since the primary interest of its students lately has indeed been on the sports side.

ST: What's the greatest challenge facing the STMA as an organization?

Gilstrap: In my opinion, the STMA is conspicuously incomplete or it's fractured at best. This is because the MLB and the NFL have their own distinctly separate meetings, and for this reason many of them don't attend the STMA conference and consequently, some of them are no longer members, if they ever were. You don't hear about the superintendents who host PGA Tour events going off and meeting by themselves instead of attending the Golf Industry Show. So, until the STMA can figure out how to get as many of the elite practitioners as possible to participate, the organization can't be truly representative of the profession. ■