

WINTER
2019

The Official Publication of the Water Environment Association of Utah



DIGESTED news

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The WEAU 2019 Midyear Conference Recap



INSIDE:

WEFTEC 2019 Recap ■ 2020 WEAU Buyers Guide ■ Finding Work-Life Effectiveness

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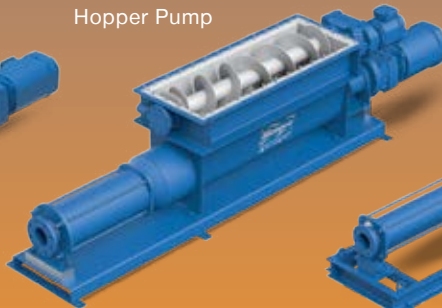
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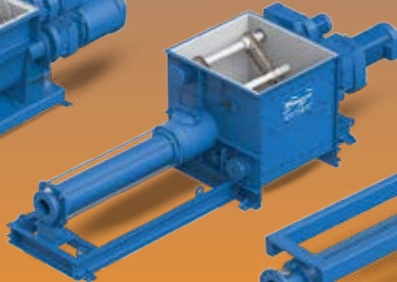
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Slurry Pump



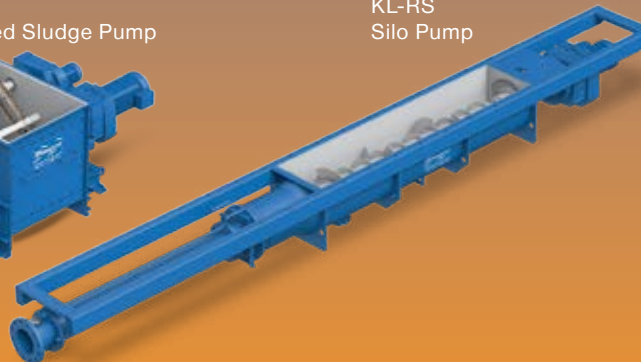
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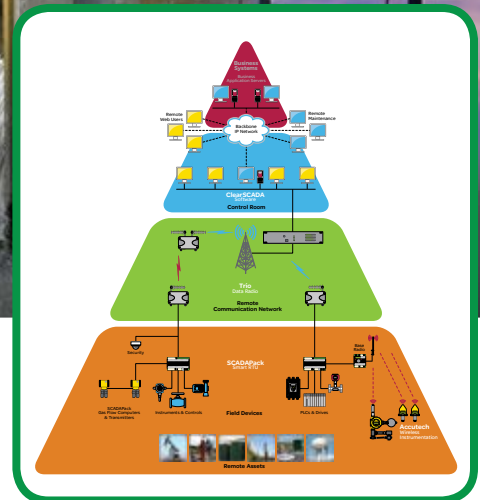
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Published by:



On behalf of the WEAU



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Managing Editor, **Scott Kelman**
and **Katie Woychyshyn**

Design/Layout, **Kristy Unrau**
Advertising Sales, **Kris Fillion**

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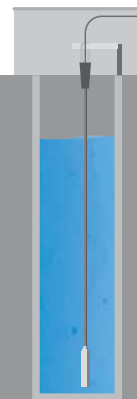
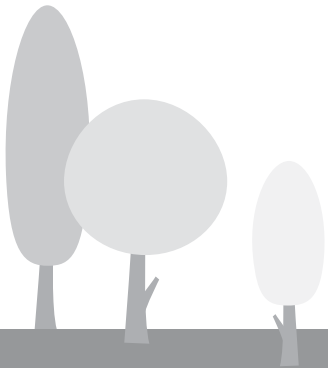
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Looking Forward

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Giles Demke

The WEAU in Team

Just prior to the WEAU Mid-Year Conference, I had the opportunity to sit in on the conference-planning meeting. As I sat there, I happened to look around at the individuals present. There were representatives from all sectors of the wastewater industry, including treatment plant management, operations and maintenance staff, regulators, and engineers. This group of people, who I might add volunteer their time through the support of their managers and employers, came together to plan and orchestrate a full day conference for over 220 attendees and with 28 technical presentations. It's an amazing process to see ideas being formed and brought forward by individuals and not just supported, but embraced by the group as a whole. In this day and age, there is a lot to be learned from this type of teamwork. My hat is off to this group of people and the rest of the volunteers and board members that work behind the scenes of WEAU to prepare and host the multitude of events that happen throughout the year.

“It's an amazing process to see ideas being formed and brought forward by individuals and not only supported, but embraced by the group as a whole.”

With some of the roles and responsibilities I have in my professional life, I have a unique opportunity to see firsthand that this type of teamwork is not unique to WEAU. It spans our entire industry, from engineering to collections workers and treatment plant operators, to the pretreatment folks and regulators. That does not mean we don't disagree, but it does mean that we try to work together to solve the problems we encounter and do the very best we can to protect our environment each day.

Now, on a personal note, I would like to take a minute and thank a former member of the WEAU Board, Mike Foerster. Mike has been serving with WEAU long

before I started in the association eight years ago. Mike was instrumental in moving the WEAU election process from a paper ballot to the electronic system we now use. Mike will be stepping away from his duties as WEF delegate and I, along with the rest of the WEAU Board wish him the best of luck and health as he continues to support our industry. With Mike's departure and in keeping with the bylaws of the organization, the Board has selected and voted on an individual to finish out the remainder for Mike's term as a WEF delegate. This person is Clint Rogers. Clint is no stranger to the organization and has the full support of the Board. Welcome back Clint. [DN](#)





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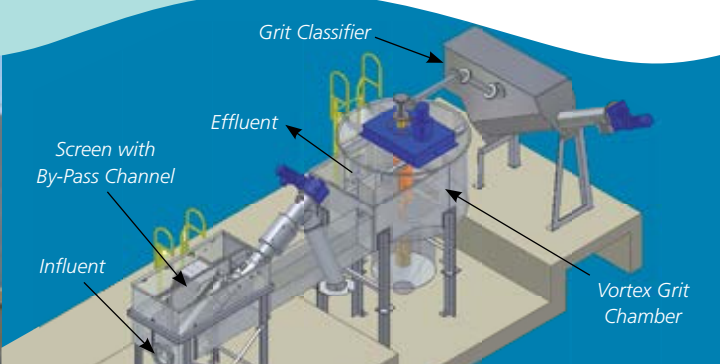
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Bryan Mansell

My family decided, years ago, to buy chickens. It seemed like a good idea at the time – a way to be frugal, organic, and animal loving. My kids were little and so excited about having baby chicks as ‘pets.’ Of course, when you buy chickens you have to buy a lot of other supplies, many of which the urban populous will never know exist. Once you get started down this road, your commitment is tested while you wait half a year for chicks to grow and begin laying any eggs. Inevitably, you begin learning a new vocabulary as you encounter and deal with common challenges. For instance, chicks get infections on their underside that require ointments to be applied (gross!). Some chicks turn out to be non-laying, neighbor-waking, anxiety-igniting roosters – not allowed in most neighborhoods. The well-planned layout of the ‘coop’ may get disrupted when the hens don’t ‘roost’ where you want them to. If you don’t regularly clean the coop, the smell gets ripe in a hurry. Plus, the food and warm layer of wood shavings or hay in the coop tends to attract colonial mice. Chickens get parasites that must be treated with special powder. Occasionally, full grown hens take turns ‘brooding’ (think hormonal nest guarding) and refuse to leave the nesting box for weeks. Some of them will peck all the feathers off of the others. Basically, their social habits are a not unlike our current congress. When you let them free-range, they’ll eat your garden, claw bald spots in your lawn, and find launch points to try to fly over the fence.

Even within your yard, getting them back to the coop can take an hour (unless you have an energetic dog that won’t eat them). Before long, you begin to think, “What have we gotten ourselves into?” There are some upsides though. They eat the bugs and spiders in the yard. We can give them our table scraps instead of throwing them in the trash. Caring for them teaches kids how to work with and respect animals; and teaches you how to research and solve problems as they arise. Having a fresh supply of eggs all the time is very enjoyable. If you don’t wash the protective coating off the eggs, they remain fresh at room temperature for a month! Those eggs also tend to cause less methanogenesis in people’s gut flora than the treated “market-fresh” ones. Depending on the breed you choose, you can have eggs of various colors, too (including green). Plus, baby chicks are pretty cute, especially when they nestle under a brooding hen. All in all, having your own chickens is more complicated and more work than it’s worth from a purely economic perspective, but we bought them anyway and still have them. Heck, we bought more. As a result, I get to keep my place in the family pecking order.

Many of the changes occurring in our industry are this way. Implementing phosphorus removal in wastewater facilities may or may not provide a significant reduction in algal blooms, but maybe it helps us (and regulators) feel like we’re doing our part. Technology helps



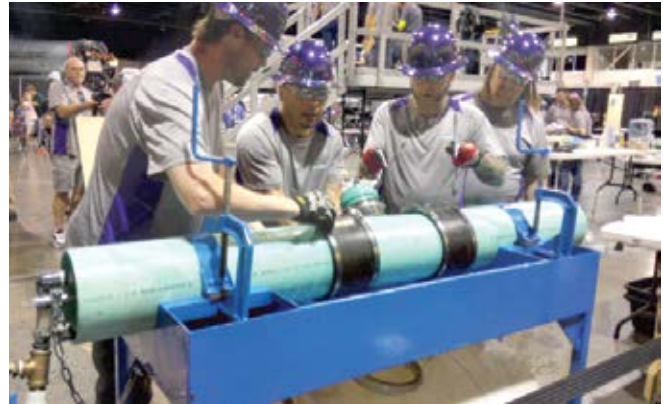
us connect, communicate, and automate things in unprecedented ways; but we have to learn how to use it, which takes time and impacts efficiency. Advanced treatment processes are allowing us to achieve greater removal efficiencies and capacities; but only if we understand how to operate them in that sweet spot and are willing to deal with the additional complexity. So, like so many things we do, before we just roll up our sleeves and put on some gloves, we should read the fine print. With advancements comes a higher degree of complications, potential challenges, and definitely some new vocabulary. At the end of the day, we end up implementing some of these changes for emotional reasons, or possibly just to keep the peace. Then, once we get through the learning curve, there are certainly some upsides that we can enjoy for years to come, or at least until it’s time for new baby chicks again. [DN](#)

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Come to the Operations Challenge Kickoff Meeting

By Clay Marriott, PWO Representative

Thank you all for the support to the Operations Challenge teams that represented WEAU in Chicago, IL in late September. We have had a great year that is coming to fast end. We look forward to the year coming up and the activities that make us all better operators. If you have interest in participating in the Operations Challenge and have any questions, please reach out to tanderson@ndsd.org or gunnb@cvwrf.org. We would love to have you come and participate. The kickoff meeting will be December 11, 2019 at 11:00 am at Central Valley Water Reclamation Facility. We are working hard to keep the supreme reputation WEAU has built in Operations Challenge. Thanks to all of you for building this reputation and helping us maintain the tradition. Hope to see all of you at the kick-off meeting, and hope you have safe and happy holiday season. [DN](#)



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A bear of a quiz

Test Your Knowledge On: Solids

- | | | |
|---|---|--|
| <p>1. The most easily removed solids are the</p> <ul style="list-style-type: none"> A. TDS B. TS C. TSS D. SS | <p>5. What is the minimum specific gravity of a grit particle?</p> <ul style="list-style-type: none"> A. 1.35 B. 2.65 C. 3.75 D. 5.15 | <p>9. A type of solid un-effected by chemical enhanced gravity settling are the</p> <ul style="list-style-type: none"> A. Aggregated B. Dissolved C. Colloidal D. Particulate |
| <p>2. The solids test where a 0.45µm filter is used is the</p> <ul style="list-style-type: none"> A. FFS B. FSS C. TDS D. TSS | <p>6. What temperature is water boiled off at for a TDS test?</p> <ul style="list-style-type: none"> A. 100°C B. 180°C C. 375°C D. 550°C | <p>10. Which solids test is used to estimate the active biomass (Incorrectly BTW)?</p> <ul style="list-style-type: none"> A. FSS B. MLSS C. MLVSS D. TDS |
| <p>3. What is the pore space on a TSS filter?</p> <ul style="list-style-type: none"> A. 1.5 µm B. 1.0 µm C. 0.45 µm D. 0.15 µm | <p>7. An Imhoff Cone is used to measure?</p> <ul style="list-style-type: none"> A. TDS B. TS C. TSS D. SS | |
| <p>4. To be called grit what is the minimum size the particle can be?</p> <ul style="list-style-type: none"> A. 0.42 mm B. 0.21 mm C. 0.12 mm D. 0.02 mm | <p>8. Which of the following equation is correct?</p> <ul style="list-style-type: none"> A. $TS = TDS - TSS$ B. $TS = TDS + TSS$ C. $TVS = TSS - FSS$ D. $TVS = TSS + FSS$ | |

ANSWERS:
 1-D, 2-A, 3-A, 4-B, 5-B, 6-B, 7-D, 8-B, 9-B, 10-C

Operator Spotlight: Marc Godfrey

Marc has been a collections operator for North Davis Sewer District for 13 years. With his years of service, he has acquired a Grade IV collections certification along and is NASCO (MACP/PACP) and TC supervisor certified. Marc is proficient in running and operating CCTV equipment, Vector trucks, and setting up traffic control zones. The parts of his job that he likes the most are the variables of the workflow and different procedures, which keeps him on his toes. He uses opportunities throughout the day to teach the newer employees the ins and out of the process. His advice for new professionals coming into the business is to get in and learn as much as you can from the experienced personnel by listening and to be as involved as much as possible.

Marc is a family man that enjoys coaching his kids' softball while also refereeing football and basketball. He has a wife and five kids, with whom he enjoys camping and fishing whenever he gets a chance. Marc attended three years of military school, a fact that anyone who knows him would never have guessed. [bn](#)



Waving the Flag



- | | | |
|---|--|--|
| <ol style="list-style-type: none"> 1. What traffic control sign should be present when using a flagger? 2. Can a flagger set up traffic control? 3. Do you need to have any documentation on you when flagging? 4. What PPE should you have on? | <ol style="list-style-type: none"> 5. How tall should your paddle be? <ul style="list-style-type: none"> A. 6' B. 7' C. 8' D. 6.5' 6. How far should your personal car be parked from your flagger station? | <ol style="list-style-type: none"> 7. Can you use a red flag in an emergency situation? 8. Is it important to have your paddle in a particular hand? 9. Can you use the paddle as a weapon? 10. Can you use automatic flagger in Utah? |
|---|--|--|

ANSWERS:

1. Flagger symbol, 2. No, 3. Yes, your flagging certification card, 4. Type 3 orange vest, night shift 10 square inches of reflective tape, 5. B, 6. 100' minimum, 7. Yes, however a paddle should get to you as soon as possible, 8. Yes, paddle should be in your right hand only that way you are able to move to a safe zone quickly, 9. No, even though you want to, resist the urge, 10. No, UDOT does not allow it.



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By Christi Priest, Pretreatment Coordinator, Central Valley Water Reclamation Facility



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On November 7, the WEAU hosted training for the Pretreatment Professionals. The training consisted of clarification to the pharmaceutical categorical category 40 CFR 439.0 from Jennifer Robinson of the State DWQ. She also gave an update of what to expect in the upcoming year. Tom Ball of the State DEQ Division of Waste Management and Radiation Control talked about the hazardous waste pharmaceutical sewer ban and the requirements for pretreatment programs. Lindsey Cowles of Salt Lake City gave a very informative talk about breweries – from the start of the process to their discharge. Cody Paul of RMEC Environmental joined us with a talk on Dissolved Air Flotation (DAF) and the challenges they face with a dairy discharger.

After lunch, there was a POTW-only discussion. We started with having everyone with five years and less in pretreatment stand, I think everyone was shocked and amazed when over half the room stood up. We emphasized the fact that we have people with many years of pretreatment under their belts and they would be excellent resources to reach out to with questions. The discussion then turned to problems that pretreatment departments are having and finding others that have dealt with similar situations. This session had a lot of participation and back and forth discussion.

We would like to thank everyone who took the time out of their busy schedules to attend this training. Please let me know of any training you would like to see in the future. [DRI](#)


“ We have people with many years of pretreatment under their belts and they would be excellent resources to reach out to.

YP Updates

Jazz Game

Keep your eye out for ticket sales openings! We'll be getting together to watch the Jazz vs. Charlotte Hornets game on January 10, 2020. Dinner is included in your \$25 ticket, so get excited.

YP Quarterly Meetings

The Young Professionals group is excited for a new start in 2020. With plans to meet in various locations as well as incorporate learning sessions at each meeting, they hope to grow a network of passionate leaders in the industry this coming year. If you are an interested YP or would like to gain more information for your mentee, please email ypweau@gmail.com. 




WEAU YPs prepare candygrams for Water For People Fundraiser.

Engaging with Other YPs Through WEF

By Josh Donegan

On Saturday, September 21, 2019, more than 150 young professionals and school volunteers gathered for the annual Water Environment Federation's (WEF) Student and Young Professionals Community (SYPC) Service Project at the Maria Saucedo Scholastic Academy in Chicago.

This year's project was to improve the entrance into the Academy and improve stormwater management through the construction of a new porous sidewalk and a 127 square foot raingarden with 25 native species of water-loving plants. The new raingarden holds up to 3,000 gallons of water, keeping the 800+ students feet dry during stormy weather. With over 200 volunteers serving in various capacities, the planning process for this project started well over a year ago and includes shoulder-to-shoulder service and education with students, public servants, and the community.

The Water Environment Federation (WEF) mission is to connect water professionals; enrich the expertise of water professionals; increase the awareness of the impact and value of water; and provide a platform for water sector innovation. The goal for the WEF SYPC Community Service projects is to connect with local stakeholders and provide engineering and education solutions often in the form of a green infrastructure project in the WEFTEC host city. 

“ This year's project was to improve the entrance into the Academy and improve stormwater management through the construction of a new porous sidewalk and a 127 square foot raingarden.



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WEAU 2019

MIDYEAR CONFERENCE

November 19, 2019 at the Utah Cultural Center

November 19 brought on the WEAU Midyear Conference. Once again, attendees had a chance to network and learn with other professionals. Technical session topics included management, operations, collections, engineering, and design. Thanks for all who attended and made this year's Midyear Conference a success.

THE CONFERENCE IN PHOTOS



James Dixon (right) and Chris Reilley (left) prepare for Kahoot, an interactive trivia game.



Attendees mingling in the Main Hall.



Midyear Conference attendees playing Kahoot.



The notorious Chad Burrell in the luncheon room.



President Giles Demke addressing the conference.

THE CONFERENCE IN PHOTOS



Rebecca Yoo (left) and Katie Reams (right) represent YPs with Water For People Fundraiser, selling out in Candygrams through the day.



Anna Rice, Winner of the Dr. Okey Scholarship Award.



Jade Snyder, Recipient of the Operator Scholarship.



Andrew Walker, Winner of the Dr. Okey Scholarship Award.



Dustin Walton, Recipient of the Operator Scholarship.



Nicole Hoffmeier, Recipient of the Operator Scholarship.



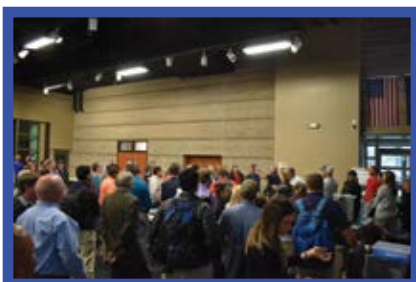
Wasatch All Stars honored for performance in 2019 WEFTEC Ops Challenge.



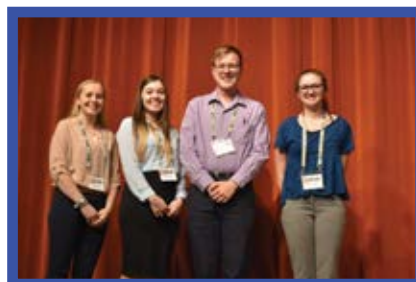
Both Utah Ops Challenge teams honored for their participation in 2019 WEFTEC Ops Challenge.



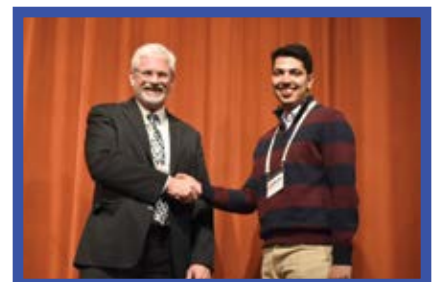
Central Valley WRF Wasted Gas honored for performance in 2019 WEFTEC Ops Challenge.



Midyear Conference attendees gather for final raffle.



Utah State Team honored for achieving 3rd Place in 2019 WEFTEC Student Design Competition.



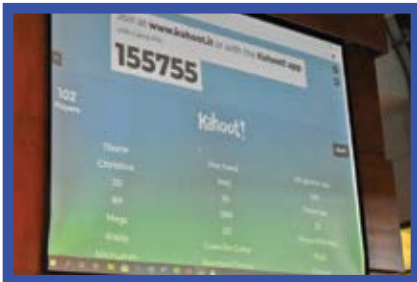
Bishav Bhattarai, commended as Student Presentation Award Winner.



Cody Snyder smiles for the camera.



Mike Foerster (right) honored for many years of service to WEAU and WEF.



Kahoot game screen.

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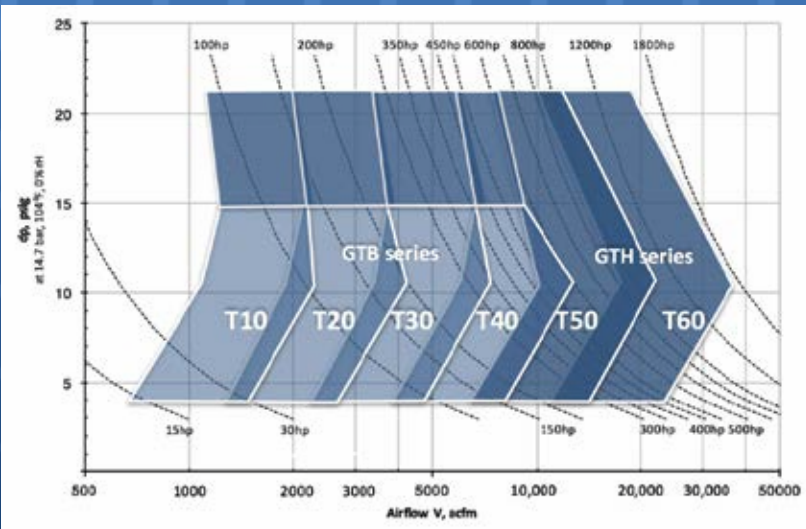
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Picture taken by Chad Burrell

WEFTEC 2019 Operations Challenge

Teams

Central Valley Wasted Gas

Mitch Desmarais

Shawn Groberg

Brock Tompson

Trey Sandness

Mark Wilhelmson

Wasatch All Stars

Richard Whittaker

Dan Johnson

Colby Willoughby

Taylor Byrum

James Cade



The Ops Challenge: What It Is All About

By Marlo Davis

As we return to action after WEFTEC 2019, I have been reflecting on what WEF, WEAU, and the Operations Challenge is **all about**. I have had the opportunity to be involved for several years now and while I have learned a ton from each group, I have learned that it is all about the people.

This is my favorite picture taken at WEFTEC this year, not because of it being the Utah guys, but because it is of three teams walking out of the competition area together talking about the events they just ran; people from different areas of the country that came together to compete and became friends.

In reflection, I remember competing at WEFTEC and meeting people from other places and helping other teams. The team from Hawaii comes to mind as I remember

them coming over to our table after the competition was over and sharing chocolates with our team because our team had given them some pointers during the competition. I also remember taking second over all to a very good team, Terminal Velocity. This year that team lost one of its members in a tragic shooting in Virginia Beach. I watched a whole community of people gather around this team to support them and another team member involved in the shooting that survived, pull through it and help continue to pull them through it. This is what it is all about, people helping people, people being with people; and it doesn't matter if they are a treatment operator, collections operator, an inspector, project engineer, or even a member of management, it is just people with people.



The people involved within WEFTEC, WEAU, or the Operations Challenge are not alone though. Those people cannot be there without the support of great people back at their MAs, districts, or cities. Support from boards, managers, and co-workers are what make it possible for this interaction to take place. So, I would personally like to thank, not only my Board at Snyderville Basin, and my Management, but also the Boards and Management of all the different entities that continue to support their employees in being involved with WEAU, the Operations Challenge and WEF.

**THANK
YOU.**

Central Valley Wasted Gas

Wasatch All Stars

Collections Event



Lab Event



Maintenance Event



Safety Event



2019 WEFTEC Student Design Competition



USU Team

Amy Carmellini
Jessica Cooper
Avery Holyoak
Kailey Jorgensen
Todd Keniry
Jade Snyder
Madeline Tennant
Nikki Vause
Andrew Walker
Ryan Dupont (Advisor)



Utah State University Successfully Represents WEAU at WEFTEC 2019

Utah State University's design team once again successfully represented WEAU at WEF's International Design Competition in Chicago this year, winning 3rd Place in a field of 14 University design teams from all over the world. The design team, lead by Avery Holyoak and the Chapter President Jade Snyder, guided the team to their 3rd Place win, having experience from the previous year's competition with a 2nd Place standing. The five students that made up this year's winning team at WEFTEC were Nikki Vause, Madeline Tennant, Andrew Walker, Amy Carmellini, and Jessica Cooper.

The design competition started when Utah State University was presented with a design prompt at the end of 2018. The prompt asked student teams to evaluate nutrient removal for both phosphorus and nitrogen at the North Davis Sewer District facility. Teams were asked to look

into different discharge locations, and with each location came different discharge regulations. The USU team researched several different nutrient removal techniques and created several alternatives to solve the problem. Preliminary designs for each alternative were developed and weighed against other alternatives until a final alternative was selected.

The USU team first presented their alternatives and final solution at a regional level to WEAU judges as well as staff from North Davis Sewer District. After they were selected to represent WEAU at WEFTEC based on the regional level presentation, the team improved their design to head to the international competition. At WEFTEC the team was judged on their presentation, ability to answer questions, and design report. After all their hard work, the team was excited to be awarded 3rd place in this international competition, with the desire and determination to do even better in the WEFTEC 2020 competition next year. [D1](#)

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CONTINUOUS 'Hands Off' Insulation Resistance Testing OF CRITICAL MOTORS

Constant monitoring of critical motors while de-energized prevents failures on startup, reduces unscheduled downtime, saves on major rewinding repairs and increases personnel safety.

For decades, wastewater treatment plant personnel have performed insulation resistance tests with handheld megohmmeters to prevent motor failures that could lead to reduced capacity, costly re-winding repairs and even unplanned shutdowns. However, these tests only provide a “snapshot” of motor health. In a matter of only a few days, motor windings and cables that are exposed to moisture, chemicals, contaminants or vibration can become compromised and fail at startup.

Portable megohmmeters also require electrical technicians to manually disconnect the equipment cables and connect the test leads on potentially energized or damaged equipment to perform the manual testing. These tests expose technicians to potential arc flashes when they access the cabinet. In the United States non-fatal arc flash incidents occur approximately 5 to 10 times per day, with fatalities at the rate of approximately one per day.

With so much at risk, wastewater treatment plant managers are recognizing the value of continuous megohm testing and monitoring of insulation resistance that initiates the moment the motor is off until it is re-started again. Armed with this real-time information, maintenance personnel are able to take corrective actions ahead of time to avoid a failure that would interrupt or reduce plant capacity. By doing so, they can improve service and save wastewater treatment plants potentially hundreds of thousands of dollars in repair fees for expensive rewinding over the life of the plant. Furthermore, permanently installed automatic testing devices allow for “hands-off” monitoring without having to access cabinets – keeping technicians out of harm’s way.

Motor Protection at Wastewater Treatment Plants

Wastewater treatment plants rely heavily on motors, though the number and type vary depending on the size of the facility and type of wastewater treated. Critical motors are essentially those that could significantly impair the ability to safely meet service objectives or affect water treatment quality levels if unexpectedly offline. Such motors can range from raw influent pumps and aeration blowers to various process pumps and final pumps. The motors can be 100 HP or more, as is the case with some aeration blowers.

In Wisconsin, for example, the City of Oconomowoc's Wastewater Treatment Facility utilizes a number of critical motors. As a basic activated sludge wastewater treatment plant, it treats about 2.8 million gallons of wastewater per day before discharging it into the Oconomowoc River according to Tom Dickson, the plant's Operations Foreman.

"Some of the critical motors include raw influent pumps that move incoming water to the highest point at the plant before gravity-fed systems take over; along with dry pit submersible pumps, aeration blowers and other motor-driven equipment," says Dickson.

To protect these motors, most wastewater treatment plants conduct time-based preventative maintenance (PM) programs that include insulation resistance tests several times a year. Based on these tests, motors may be scheduled to be sent out to repair shops for reconditioning.

However, the Oconomowoc wastewater treatment facility alternates between two redundant systems that get roughly equal time, so critical motors could be tested while off line. Still, testing with handheld megohmmeters was infrequent.

Given the humid environment, this proved insufficient when a motor that was called on during a slight pressure drop failed on start-up. "Wastewater treatment pumps are exposed to a really wet, moist environment and the motors can burn up if they start up wet, which is costly," says Dickson. "Rewinding or replacing the raw pumps, for instance, would probably cost over \$50,000 each."

As a solution, the wastewater plant implemented heaters in critical motor windings to keep them dry, as well as a continuous testing and monitoring device, called Meg-Alert. The testing device is permanently installed inside the high voltage compartment of the MCC or switchgear and directly connects to the motor or generator windings. The unit senses when the motor or generator is offline and then performs a continuous dielectric test on the winding insulation until the equipment is re-started.

The unit functions by applying a non-destructive, current limited, DC test voltage to the phase windings and then safely measures any leakage current through the insulation back to ground. The system uses DC test voltage levels of 500, 1000, 2,500 or 5,000 volts that meet the IEEE, ABS, ANSI/NETA and ASTM International standards for proper testing voltage based on the operating voltage of the equipment.

The test does not cause any deterioration of the insulation and includes current limiting technology that protects personnel. "The Meg-Alert equipment tests continuously whenever the motor is off, so you are going to catch a problem like excess moisture or a breakdown of the windings before a critical motor burns up," says Dickson.

Hands-Off Monitoring

The continuous monitoring system also allows for a hands-off approach that does not require service technicians to access control cabinets to perform a manual insulation resistance test.

Instead, an analog meter outside on the control cabinet door shows the insulation resistance megohm readings in real time. The meter also indicates good, fair and poor insulation levels through a simple "green, yellow, red" color scheme. When predetermined insulation resistance set point levels are reached, indicator lights will turn on to signal an alarm condition and automatic notifications can be sent out to the monitoring network.

Most motors utilize heaters to maintain the temperature inside the motor so it does not vary drastically from operating temperature or ambient temperatures outside the unit. If it goes below the dew point, the motor will start picking up condensation while offline.

However, if these heaters fail to operate properly or the circuit breaker is tripped, plant personnel may not be aware of it until the motor fails on startup. Although these motor heaters are checked regularly, this can leave critical motors unprotected for weeks or even months.

Fortunately, continuous monitoring and real-time information from the Meg-Alert equipment can also show if the heaters used to maintain thermal temperatures and prevent condensation are properly working. If not, maintenance personnel can take corrective actions ahead of time to avoid critical motor failures and interrupted production.

Dickson notes that, at his wastewater treatment facility the Meg-Alert device is hooked to the critical motor starter and will prevent the motor from starting if there is a serious problem. "We have it set up to continuously test critical motors that are not running," he says. "We are constantly testing windings for breakdown and failure."

He points out two notable examples of success. "We found out that a motor was wet inside and a winding heater had failed when the Meg-Alert alarmed and prevented the motor from running," says Dickson. "Another time the device stopped a motor from starting when a wire had rubbed through, which prevented a short to ground failure."

Preventing Arc Flashes

According to Dickson, enhancing employee safety and preventing potential harm from arc flash was another key factor behind the decision to install the continuous insulation resistance testing and monitoring devices.

Arc flashes are an undesired electric discharge that travels through the air between conductors or from a conductor to a ground. The flash is immediate and can produce temperatures four times those at the surface of the sun. The intense heat also causes a sudden expansion of air, which results in a blast wave that can throw workers across rooms and knock them off ladders. Potential results of an arc flash include third degree burns, blindness, hearing loss, nerve damage, cardiac arrest and death.

Probable causes of an arc flash listed by NFPA 70E include "improper use of test equipment." Although de-energizing equipment before testing and wearing appropriate personal protective equipment (PPE) is recommended, the best solution is to eliminate the need to access control cabinets to perform insulation resistance tests.

"We have a licensed electrician and staff who are arc flash trained, but you can never be too careful with arc flash," says Dickson. "So, having a device that makes manual testing unnecessary only makes operation and maintenance that much safer."

For more information, contact Meg-Alert at www.megalert.com; phone 800-778-5689; or at 8766 Frank Drive, Minocqua, WI 54548. 

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Finding Work-Life Effectiveness

By Kristen Braden, Vice President of Construction Operations for H.R. Gray, a Haskell Company

Balance. No matter what subject we're discussing, when you say the word 'balance' it conjures images of serenity, fairness, equality, or a scene in correct proportions. But when we're talking about work-life balance, for most people, the images become more like a mad juggle. Technology is now ubiquitous, and while useful and necessary in most cases, it makes us more connected to our work life at all hours of the day and night, whether we want to be, or not. The work day seems to never end, and that can make finding any work-life balance seem like an impossible feat.

The phrase itself is fraught with problems, even though the idea is good. Balance often means thinking of things separately. It means imagining one aspect of our lives on one side of the scale and another aspect on the other side. For most people, this can seem as if their work must be in one compartment, while their personal life, including kids and family, are in another compartment. This sense that aspects of your life need to be separate can make you feel like you must choose. Instead, I like to think that it is about finding work-life effectiveness. It's not about *choosing* work vs. life – it's making them both work in tandem.

For years, my professional life and personal life worked well together. I was building my career while spending time with my friends and family and participating in hobbies that I love. Then, two and half years ago, I had my daughter, and a year ago, my son. The 'balance' that I thought I had was thrown completely off and I had to find a new normal.



It's Not About Balance, It's About Effectiveness

There's a visual demonstration circulating online showing how to fit every aspect of your life together. In this example, imagine your life as a mason jar. Place large rocks representing the most important facets of your life – spending time with family, maintaining your health, your faith – in the jar. The jar looks full, but there's still room for more aspects of your life. Pebbles are poured into the jar and fill in the spaces between the larger rocks. These pebbles represent things such as work, your house, hobbies and friendships. These are important things, but you could survive without them. Again, the jar looks full, but there's still room for more. Sand is poured in next filling the smaller voids. The sand might be watching Netflix, or the mundane task of running errands. They're parts of life, but definitely not your foundation. Now, the jar is very full, but there's still room to pour in water, which seeps down among the large rocks, pebbles and sand to fill up any remaining space. The water could be anything that's truly trivial – like that argument you keep having with your neighbor over who's lawn is in better shape. Try filling up the jar in the opposite order by putting in the water or the sand first, and it quickly becomes apparent that it will not work.

How to Achieve Work-Life Effectiveness

Using this example as a metaphor, it becomes clear that we must solve the big problems first. Make time in your life for the things that are most important to you, and you'll still have time for the little things. We already do this on a primitive level. No matter how busy we are, we make time to eat. We still carve out time to sleep every night. We do these things because we know we must – our literal survival depends on it.

Extend that concept just a little and it's not hard to see that our survival also depends on maintaining our mental health and reducing stress and possibly on removing people and things from our life that don't serve it. Perhaps, for you, this means drawing firmer boundaries with people, or saying no to that last invitation so that you can get a good night's sleep instead. Make these decisions as if they are as important as eating, because, in many ways, they are.

Stop Searching for Balance

Realize that work-life balance is elusive and find harmony in everything you do. Every act does not have to be one of completion and achievement. Taking away the pressure of trying to be perfect gives you permission to do what you need to do to be in harmony with the needs of the moment.

Do one thing and enjoy it. Then go do another thing and enjoy that.

Be Here Now

To live effectively is to be present in the moment. When at work, focus on the activity at hand, not something else. Likewise, when you're at the table with your family, or you're out with friends, put your phone away and enjoy the camaraderie. Do one thing and enjoy it. Then go do another thing and enjoy that.

Live Your Vision and Core Values 24/7

To be effective, you need to be clear on what's important to you. Your personal vision and core values help guide you in what you want in life. The key is to live your values – when it's convenient and, more importantly, in times of stress. Being true to your values brings balance and effectiveness to even the most difficult situations.

Make Conscious Choices

Go into your quest for better work-life effectiveness with a road map. Look at the quality and quantity of time you spend with family and friends. What about the other aspects of your life that you thought about when you read the jar of life example above?

Making conscious choices may mean managing yourself better. Jeff Davidson, author of *Simpler Living* and a work-life consultant, expounded on the six ways you can manage yourself. Work-life effectiveness hinges on these things:

- 1. Self-Management:** Sleep, exercise, nutrition. Self-management of your energy and time is vital.
- 2. Time Management:** Set appropriate goals. Create space for what is urgent and discern what does not need your full attention right now.
- 3. Stress Management:** Research is clear that as our stress increases, our productivity and happiness decreases.
- 4. Change Management:** Cultivate resilience. Let go of habits that don't serve you. Make that a habit.
- 5. Technology Management:** Technology is ubiquitous now and there's a lot of pressure to use it. But remember, it is a tool. Put it to work to serve you, not to rule you.
- 6. Leisure Management:** Recognize and accept the importance of downtime.



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The Case for Diversity

Part of being successful in the workplace hinges on feeling like you belong, and that the person you are at work is similar to the person you are at home. It doesn't matter if you're a woman or a man – both can have these feelings – although the language of work-life balance is most often geared toward women. In 2016, Michelle Ryan, a professor of social and organizational psychology and dean of postgraduate research at the University of Exeter, and professor of diversity at the University of Groningen, The Netherlands, gave a TedxExeter Talk called *Balancing Time or Balancing Identity?* Her point is that this journey is not just about making choices about how you spend your time. Take surgery, for example. In Ryan's UK, only 10% of surgeons are women. Surgery requires long hours and nightwork. And yet the field of nursing or midwifery, which has a high percentage of women, also requires long hours and nightwork. Work-life balance is not just about how time is spent; it's also about being motivated to find the balance or harmony.

In the workplace, anyone of a different race, religion, ethnicity, gender, sexuality, age or disability can feel like they don't belong. Ryan's research uncovered the fact that anyone who feels underrepresented or doesn't see anyone like them in positions of success will be less likely to make the sacrifices they might feel they need to make to be successful at work, because they feel they won't reap the rewards. Rather than even seeking to find a work-life balance, these people will simply opt out. When that happens, your business and our society as a whole loses out on all that potential. On the flip side, it is important to be that role model for others. Be transparent about the struggles with finding that harmony between work and personal life. That openness can help with employee retention.

Haskell Women's Network

Last year, my firm's parent company, Haskell, started an initiative called the Haskell Women's Network. One of Haskell's top priorities is to embrace diversity and inclusivity because a more diverse thought is a more complete thought. I am honored to be a part of this initiative and I am inspired every day by the many women from all parts of the organization. Our efforts are to spark a creative movement to challenge thinking, expand the way we do business, and develop as professionals. Our plan is to empower, develop, connect and engage all women at all levels of the Haskell organization.

Not Just for Women

We've been trained to think that work-life balance extends primarily to women with young children. But in fact, when managers acknowledge that all employees have demands on their energy and time outside of work, everyone is happier, healthier and at least as productive as when those demands are not acknowledged. Childless women may be taking care of an ill parent. Fathers with teenage children may want to see their kids perform in the school play. Whether single, married or partnered, all employees experience more belonging and more productivity in the workplace when they are given the tools to live, and work, more effectively.

An Organizational Approach

Work-life balance, or living in a way that life and work can coexist happily, is not just an individual thing. There is an organizational benefit to allowing each member of the team to realize his or her full potential. An employer allowing employees to work remotely isn't just benefitting the employee – it's also allowing the organization to be more agile. A flexible and resilient company culture respects that there are different ways for the work to get done. Ask your team how they work best. Empower them with the technology and tools to do their best work, and then trust them to deliver their best work. [DRI](#)

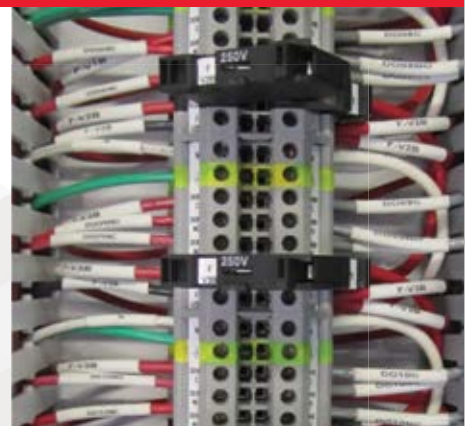
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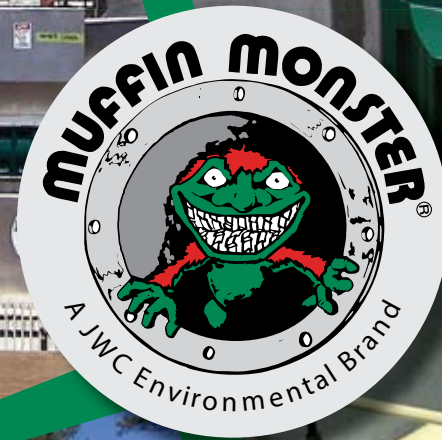
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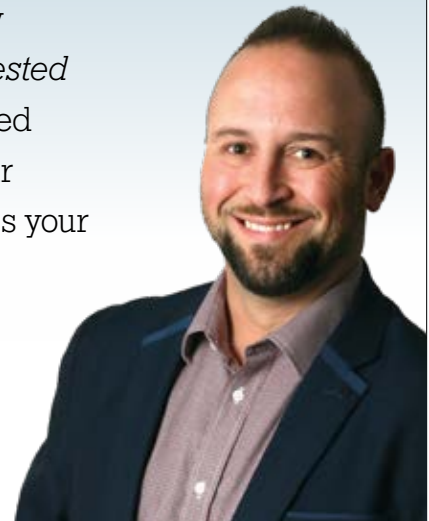
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