January ASCE Section Meeting

TOPIC: Next Generation Resource Recovery Update: Startup and Construction of the Co-Digestion to Renewable Natural Gas (RNG) Pipeline Injection Project at the Des Moines WRF

REGISTER

DATE & TIME: 12 PM to 1 PM, January 21st, 2021

SPEAKERS: Dustin Craig, PE and Laurel Schaich, PE

PRESENTATION: Join us to for an overview of the award winning co-digestion program at the Des Moines WRF. This facility received over 21,000 tanker truck loads of outside wastes in 2019 which was converted to biogas in an anaerobic digestion (AD) process. The biogas is further treated into Renewable Natural Gas (RNG) for utility pipeline injection. The RNG gas generates lucrative environmental attributes (RINs) with a value of $3-$4M annually. The carbon-negative renewable energy provides equivalent natural gas for 5,500 homes. This presentation will include an overview of the financial analysis, detailed anaerobic digester and biogas treatment facility design, and performance testing and current operating data of AD and RNG systems.

BIOS: Dustin Craig, PE is an environmental engineer with 15 years of experience, all in the Kansas City office of CDM Smith, designing wastewater infrastructure, with an emphasis in solids handling processes and bioenergy utilization processes. Dustin is the Bioenergy Discipline Leader for CDM Smith.

Laurel Schaich, PE is an environmental engineer with five years of experience in wastewater treatment, with an emphasis in biogas, anaerobic digestion, codigestion, biosolids, and bioenergy. Laurel is a classically trained pianist and chemical engineer.
Hello members of the Kansas City Section,

Happy New Year! I hope you had a great holiday break. Unfortunately, it’s been a rough start to 2021, but I’m confident that the year will get better as the weather warms up and the vaccine gets distributed.

The Section had a couple virtual meetings since our last newsletter. In November, we had a presentation from Dean Kevin Truman on the new UMKC engineering building called the Plaster Free Enterprise and Research Center. In December, we had a presentation from Doug Dietrich of Burns & McDonnell on Bullet-Proof Ways to Gain Value from Envision on Your Projects (followed by a fun holiday trivia). I continue to look forward to when we can meet in person again, but I don’t anticipate that happening for a while except for some outdoor socially distanced community service activities.

Until that time, the Section will continue to use Microsoft Teams and Zoom to keep active and stay engaged! The Younger Members Group has continued being successful hosting virtual events such as trivia and bingo, and cleanup events along I-435 and at Swope Park. They also hosted an event with New York Life on planning for your financial future. The second annual mentorship program with UMKC kicked off as well.

Look farther down this newsletter to find nomination requests for our 2020 Project of the Year and Civil Engineer of the Year awards. This is a great way to recognize project teams and engineers for their outstanding work!

Lastly, we’ve decided to postpone our centennial celebration so that it can be a safer and more enjoyable experience. The banquet has been moved to Saturday, October 16th (still at the Kansas City Club). We’ll also have a social outing and a community service event sometime this summer or fall to celebrate our tremendous milestone. Each month, we’ll send an email containing interesting stories and fun facts about our 100 year history.

As always, we’re looking for more volunteers, so if you’re interested in getting more involved, please reach out to me or any of our officers.

Stay safe and go Chiefs!

- Stephen Stinger
Engineer of the Year

NOMINATION REQUEST for Civil Engineer of the Year

The Kansas City Section of the American Society of Civil Engineers will recognize a “Civil Engineer of the Year” for 2020. This is an annual tradition to recognize the important contributions to our society provided by civil engineers. The selection will be based on the candidate who best meets one or more of the following criteria:

- Exemplary professional conduct in a specific outstanding instance in 2020;
- Established reputation for professional service;
- Significant contribution toward improving the professional aspects of civil engineering education;
- Professional guidance of qualified young persons who would seek civil engineering as a career, or professional development of young civil engineers in the formative stages of their careers.

The Civil Engineer of the Year will be chosen based on information submitted. The selection committee may ask additional questions during the selection process, at the committee’s discretion, to clarify specific points or gather additional information.

Submittal Requirements:

- 1-3 pages in length on 8.5” x 11” paper.
- Submitted in either electronic .pdf format or as hard copy.
- Submissions may be by email or hand delivery. A .pdf delivered on CD or other common storage medium is also acceptable.
- Include contact information for nominated Civil Engineer
- Include contact information for person nominating, if different.
- Include a description of how and why the Civil Engineer personifies one or more of the selection criteria.

A plaque and cash honorarium will be awarded to honor the selected Engineer of the Year.

Submittals will be accepted beginning January 18, 2020, and shall be delivered prior to 5 PM on March 5, 2020 to:

Attn: Katie Handley Stucky, ASCE KC Section Awards Chair
GBA
9801 Renner Blvd, Suite 300
Lenexa, Kansas 66219
Email: khandley@cbateam.com

Questions? – Contact Katie Handley Stucky 913.577.8251
Project of the Year

NOMINATION REQUEST for Civil Engineering Project of the Year

The Kansas City Section of the American Society of Civil Engineers will recognize a “Project of the Year” for 2020. This is an annual tradition to recognize the important contributions to our lives and lifestyle that are provided through civil engineering projects. In order to be eligible, the project must have been substantially complete by December 15, 2020 and have been constructed in the KC Section area. The award will recognize the Owner, Civil Engineering firm of record and the General Contractor. The award will be given to the project that is most exceptional in the Civil Engineering design aspects in at least one of the following categories:

- New or innovative technologies, design, or construction.
- Creative Solutions
- New or refined methodology applied to the Project to enhance sustainability

The Project of the Year will be chosen based on information submitted. The selection committee may ask additional questions during the selection process, at the committee’s discretion, to clarify specific points or gather additional information.

Submittal Requirements:

- 1-4 pages in length on 8.5” x 11” paper.
- Submitted in either electronic .pdf format or as hard copy.
- Submissions may be by email or hand delivery. A .pdf delivered on CD or other common storage medium is also acceptable.
- Include organization and contact information for Project Owner
- Include firm and contact information for Civil Engineering firm of record
- Include firm and contact information for General Contractor
- Include total project cost (unless proprietary)
- Include a description of the project and how it demonstrated exceptional Civil Engineering.

Submittals will be accepted beginning January 18, 2021, and shall be delivered prior to 5 PM on March 5, 2021 to:

Attn: Katie Handley Stucky, ASCE KC Section Awards Chair
GBA
9801 Renner Blvd, Suite 300
Lenexa, Kansas 66219
Email: khandlev@gbateam.com

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Centennial Celebration – The Beginning of ASCE

It has been documented that as early as 1915 a small group of engineers would meet to discuss developments in the engineering world. The group continued to meet and on April 25th, 1921 the group received its charter as the Kansas City Section of American Society of Civil Engineers. The early group and founders of the Kansas City Section consisted of the following:

L.R Ash - Harrington, Howard & Ash (now HNTB)

E.B. Black - Black and Veatch

J.B. Hanna - Chief Engineer, Kansas City Terminal Railroad

J.L. Harrington - Harrington, Howard & Ash (now HNTB)

G.C. Hayden - Chief Civilian Engineer, USACE

I.G. Hedrick - Waddell & Hedrick

E.E. Howard - Harrington, Howard & Ash (now HNTB)

C. E. Johnson - Chief Engineer, Kansas City Southern Railroad

A. Maitland, Jr. - Chief Engineer, Kansas City Bridge Company

R.E. McDonnell - Burns and McDonnell

E.M Stayton - Surveyor & Consultant

H.P. Treadway - Kansas City Bridge Company

N.T. Veatch - Black and Veatch

H. Von Unwerth - Structural Consultant

R.W. Waddell - City Engineer

E.C.L. Wagner - Contractor

The first meetings were held in the evenings at the University Club. The format was similar to today as each meeting had a speaker, but meals were not served at the time. John V. Hanna was the Section’s first President and Henry C. Tammen was the first Secretary. Meetings were held quarterly on the first Tuesday of March, June, September, and
December according to the 1922 ASCE Yearbook. The last meeting of the year was the annual meeting.

There were 51 members in the KC area who were members of ASCE National who became charter members of the Kansas City Section. In addition, there were 43 associate members. Alexander Maitland, Jr. was the Section’s first National ASCE officer serving as Director of District 14 in 1924 through 1926. The Kansas City Section has produced three national Presidents, E.B. Black, E.E. Howard, and W.R. Gibbs.

Terry Uhl – History of the Profession

Civil Engineering & Land Surveying

As a nine year old boy on an Iowa farm, I had a ‘bird’s eye view’ of an improvement project that included 1) removal of an outdated truss bridge, 2) realignment of a (county) road, 3) construction of an RCB, and 4) knocking down a small hill for fill material. I had recently lost my mother, and it was perfect therapy for a grieving son. I was amazed, and that was the work that I wanted to pursue.

Between 1993 and 2000, I was appointed by two Kansas consecutive governors as the first dual licensed ‘professional engineer / land surveyor’ on the recently expanded Kansas State Board of Technical Professions. Excellent duty - working on licensing & disciplinary issues with Architects, Landscape Architects, Geologists, Engineers, and Land Surveyors.

Although I remain mostly a Civil Engineer, I proudly call myself a Land Surveyor as well. Reading about and/or looking for traces of historic surveys is a pastime.

Enjoy this piece, check out the music, and make plans to find one of the monuments on the Mason-Dixon Line.

Happy New Year & Best Wishes for 2021!

Terry S. Uhl, F.ASCE

Uhl Engineering, Inc.
OUR VISIT TO THE MASON-DIXON LINE

There are few land surveys in United States history that are better known than the Mason-Dixon Line, dividing Maryland from Delaware on the east and Pennsylvania on the north.

In June 2019, we visited our son doing an internship in Hershey, PA. I had made prior arrangements with Eric Gladhill, Professional Land Surveyor in Gettysburg, PA to help me locate ANY of the stone monuments along that line.

We looked (with permission, but without success) for #84 (the number represents the miles west of the ‘POB’). We were able to find #85, in a pasture (see photos).

We made a second trip to Gettysburg to tour the battlefields.

Terry S. Uhl
KS Professional Land Surveyor
PE/LS Member KSBS (1993-2000)

The Pennsylvania side – ‘P’

The Maryland side – ‘M’

- The survey was commissioned to settle a dispute between two powerful families: Calvert (MD) and Penn (PA)
- The survey was completed in the late 18th century.
- Generally, stone monuments were placed every mile along that line of latitude. Most are on private property.
- It is commonly believed that the Mason-Dixon Line divided the Union & Confederacy during the American Civil War. While largely true, Maryland remained a Union state, thereby not allowing Washington DC to be surrounded by Confederacy.

- In the western states, we use the ‘Rectangular’ survey system. Flying over western states, you can see the patterns.
- In the East, the ‘Colonial’ system is used, relying more on natural features. It was interesting talking to Mr. Gladhill about his ‘Colonial’ surveys in PA & MD.
- Mark Knopfler (Dire Straits) recorded ‘Sailing to Philadelphia’ on a solo album with the same title. James Taylor contributed.
- The song is from the perspective of Charles Mason and his assistant, Jeremiah Dixon, on their way to America. Both were trained in surveying & astronomy.

- Land surveying is a profession that combines mathematics, history, legal/law, research, writing, technology, continuing education, and nature.
- In Kansas, Land Surveyors are licensed thru the Kansas State Board of Technical Professions (www.ksbsp.ks.gov).
- The Kansas Society of Land Surveyors seeks to educate and advocate for the Land Surveying profession (https://ksis.com).
GPR Committee Update

ASCE Society will be releasing the 2021 Infrastructure Report Card on March 3, 2021. Look out for an opportunity to register for the release event.

The pandemic cancelled the last year’s ASCE Legislative Fly-In. This year will be a virtual event that will occur March 3 and 4. The virtual fly-in will include the same opportunities that occurred in the past: virtual meetings with members of Congress or their staff, exclusive briefing sessions on key legislation, and online training on lobbying and influencing your elected officials. The fly-in will be held in conjunction with the release of the 2021 Infrastructure Report Card.

ASCE has listed the following and more as 2021 Federal and State priority issues (https://www.asce.org/priority_issues/):

- Civil Engineering education
- Clean water, drinking water, and wastewater issues
- Infrastructure investment to stimulate the economy
- Natural hazards mitigation & infrastructure security
- Qualifications based selection for engineering services
- Transportation infrastructure investment

Missouri has the lowest fuel tax of 48 states at 17 cents per gallon. In MoDOT’s Citizens Guide to Transportation funding, explains the hidden cost to each of us that drives Missouri roads. Hidden costs include accelerated vehicle depreciation, additional vehicle repair costs, increased fuel consumption and increased tire wear costing us $99 a month. The ASCE Kansas City and St. Louis sections produced a video you can share discussing these hidden costs https://www.youtube.com/watch?v=TmxXee96YWg It is vital for those that live or work in Missouri to connect with your state legislative representatives to discuss how important funding our roads and bridges are to each of us.

Funding on the Kansas side is much better with the IKE program but it is still important to keep in touch with your representatives to prevent the funding of IKE being absorbed into the general fund like what happened to T-Works https://www.infrastructurereportcard.org/state-item/kansas/

A great way to get involved is to sign up to be a Key Contact. As a Key Contact you will receive notifications about upcoming legislation as well as pre-drafted emails to make it easy for you to contact your elected officials. Be the squeaky wheel and make your voice heard. Sign up here:

https://www.asce.org/keycontacts/
ASCE Younger Member Group Update

Our Younger Member Group have been working hard to provide engaging virtual events to our members. We are so grateful for our 17 YMG Officers, with their help and efforts we were able to have a successful year!

This fall, our Social Chairs hosted our second Virtual Trivia (October 14th) and virtual Bingo (November 10). We had a great turnout at these events and got to see familiar and new faces.

Our Community Service Chairs hosted A Highway Cleanup, a few Park Cleanups with KC Parks and Rec and a Harvester’s Virtual Canned Food Drive. These events were very fun and necessary to engage our YM’s interested in volunteering!
Our Membership Chairs hosted an excellent UMKC Mentorship Kickoff event (October 30) with nearly 30 attendees split between UMKC students and YM’s. The program was thoughtfully executed and we’re hopeful the students benefited from this mentor connection.

Our Professional Development Chairs hosted a very beneficial financial planning presentation by New York Life (November 5).
Finally, we had our YMG officer’s meeting and Holiday Ugly Sweater Competition (December 7), where we had a lot of fun reflecting on the past 6 months and planning the next 6 months for our group.

Congrats to Alle for winning first place! Super creative!

We are so grateful for all the effort our chairs put into their committee and how together we’ve overcome the challenges this past year. We’re excited to bring you new events this year and hopeful for progress and health for everyone this new year.

Upcoming Events:
01/12 - [Virtual Pictionary Happy Hour](#) at 5:00 PM
04/03 - [Park Clean up with KC Parks & Rec](#) (more info coming soon)
Missouri S&T Update

Lots of news last semester from Missouri S&T. The biggest was the new Kummer Institute gift from S&T Civil Engineering alumnus Fred Kummer. The $300 Million dollar gift will fund new facilities and 100 graduate fellowships and over 300 undergraduate fellowships annually. Also of specific interest to the Kansas City area. The new Missouri S&T-Kansas Connection Award will cover 100% of the difference between in state and out-of-state tuition exclusively for Kansas students who enroll at S&T for the fall 2021 semester. Our ASCE student chapter remains active in the COVID times, with speakers at our chapter meetings. While almost entirely virtual, we still had turn-out for meetings of over 110 students a few of the meetings. Very proud of our resilient Miner students!

The coming year also brings great opportunities for graduate degree opportunities from Missouri S&T online in Civil and Environmental Engineering. The following graduate certificate programs are offered through the civil and environmental engineering department. Only four core courses (12 credit hours) are required to complete a graduate certificate program, and some course substitutions are available. Spring online courses are offered in each certificate program! Still time to enroll for the Jan 19th start date.

- **Contemporary Structural Engineering** - Analysis and design of structural systems; including structural vibrations and stability, advanced steel and concrete design, and using composite materials to strengthen structural systems.
- **Geoenvironmental Engineering** - Design, implementation and management of cost effective site assessment and ground investigation, advanced analysis techniques in soil mechanics and environmental topics.
- **Geotechnical Earthquake Engineering** - Assessment, repair and rehabilitation techniques with an emphasis on composite materials for infrastructure renewal.
- **Infrastructure Renewal** - Construction methods and project management, systems engineering and financial risk management.
- **Project Engineering and Construction Management** - Geotechnical design and consideration of soil interactions with structures in geotechnical earthquake engineering.

Certificate programs may also be used as a pathway to a graduate degree program. **Credits earned in a certificate program can be counted toward the master’s degree** so long as you earn a B or better in each certificate course. Entry opportunities apply to master’s degrees in civil or environmental engineering or to an architectural engineering or construction management emphasis in civil engineering.

For more information, contact the Department of Civil, Architectural and Environmental Engineering at CArE@mst.edu. Or go online to learn more at: https://distance.mst.edu/cafe/!

If you have questions or want to hear more of the great things at S&T, contact CArE@mst.edu
- Dr Joel Burken, Department Chair and Curators Professor