

OKLAHOMA ENGINEERING CONFERENCE

JUNE 17-18, 2021

VIRTUAL EVENT

THURSDAY, JUNE 17

8:00-8:25 a.m.

OEF Update (.5)

Adrienne Covington Graham, OEF Executive Director

8:30-8:55 a.m.

PELS Legislative Update (.5)

*Kathy Hart, OK State Board of Licensure for Professional Engineers and Land Surveyors
Executive Director*

9:00-10:00 a.m.

PELS Enforcement Update (1.0)

*Bruce Pitts, PLS; OK State Board of Licensure for Professional Engineers and Land Surveyors
Compliance Strategist*

10:00-10:15 a.m.

BREAK

10:15-10:55 a.m.

The Challenge of Licensure in the 4th Industrial Revolution (.75)

*Lance Kinney, Ph.D., P.E.; Executive Director, Texas Board of Professional Engineers and
Land Surveyors.*

This session will discuss the work of the Engineering Change Lab – USA, explore the regulatory and ethical challenges that are accompanying the advent of the Fourth Industrial Revolution, and how the licensure model for engineering might need to be transformed in order to meet those challenges.

11:00-12:00 p.m. (1)

What is Your Covid Liability?

Courtney K. Warmington, Fuller Tubbs Bickford Warmington & Panach, PLLC

Will the next wave of the pandemic include a flood of COVID litigation? Employers have been concerned about potential liability if an employee becomes infected with COVID-19 while at work. However, this isn't the only liability issue employers need to consider. Issues related to discrimination, leave, and privacy may also be a concern. This presentation will cover an overview of some liability considerations and how to protect against them.

12:00-1:00 p.m.

BREAK

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1:00-1:55 p.m.

GENERAL SESSION (1)

Winter Storm Response

Eric Wenger, City Engineer and Director of Public Works, City of Oklahoma City

The “Las Vegas” of Storm Cleanup – The City ... Never Sleeps

How the City of Oklahoma City responded to a historic Ice Storm in October 2020 and a historic Winter Blast in February 2021

2:00-2:55 p.m.

BREAKOUT SESSIONS (1)

Breakout I

Regional Transportation Plan

Jason Ferbrache, Interim Executive Director, Regional Transportation Authority of Central Oklahoma

The vision for Regional Public Transportation in central Oklahoma has steadily progressed over the years culminating in the formation of the Regional Transportation Authority of Central Oklahoma (RTA) in 2019. The RTA is a regional independent government agency, comprised of six member cities which include Del City, Edmond, Midwest City, Moore, Norman and Oklahoma City, that is focused on planning and constructing high-capacity transportation corridors to connect the member cities and other jurisdictions. This session, The RTA Transit System Plan, will inform the attendees about the formation of the RTA, introduce the RTA's Board of Directors, provide an update about the goals and system plan that were recently approved by the RTA and convey the next steps and timeline for planning into construction.

Breakout II

Forensic Recovery from the Louisiana Hurricanes

Chad Williams, P.E., President, Valor Forensic Engineering Services

3:00-3:15 p.m.

BREAK

3:15-4:10 p.m.

BREAKOUT SESSIONS (1)

Breakout I

Rural Broadband in Oklahoma

Brian Whitacre, Professor and Jean & Patsy Neustadt Chair, Department of Agricultural Economics, Oklahoma State University

COVID-19 highlighted the importance of having a reliable broadband connection. This session will review the different technologies for providing broadband Internet access and discuss trends / current data on broadband availability across the state. It will also provide data sources for checking broadband availability / adoption in your area and review recent policy changes put forth to improve rural connectivity in Oklahoma.

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Breakout II

SUE – Solutions to Find Underground Utilities in Design and Construction

Michael Crain, P.E., KMCE, Inc.

Utility strikes happen daily, and the risk continues to increase as more and more utility congestion takes place within our communities. As engineers, we always strive to use every opportunity to improve our designs and create successful projects, but all too often existing utilities marked improperly or not marked at all can bring the best projects to a stop. Utilizing SUE (Subsurface Utility Engineering) can help prevent the unwanted surprises of utilities not being where they are expected and creating change orders or construction delays. Through the use of geophysical prospecting techniques, underground utilities can be located to within 6-in of their actual locations and when exact locations are needed the use of vacuum excavation will provide utility exposure and the opportunity to document the utility precisely. When SUE is implemented on a project, studies as far back as 1999 show that a cost savings over 4 times the amount invested in SUE is typical, but more recently that number has doubled or even tripled. This presentation will provide a basic understanding of SUE and how engineers and contractors can best utilize SUE to provide the information they need to complete a successful project.

4:15-5:15 p.m.

GENERAL SESSION (1)

Tinker Air Force Base Update

Kristian Olivero, Tinker Air Force Base

Oklahoma City Air Logistics Complex at Tinker Air Force Base has a renewed focus on technical partnerships with industry and academia. The goals of partnerships are to improve the technical competencies of our existing workforce, recruit high caliber talent, accelerate transition of technologies to the Air Force, and to cultivate relationships that enable agile problem solving. These partnerships are already providing mutual benefit and improving Aerospace in the state of Oklahoma.

5:15-6:15 p.m.

OSPE Annual Membership Meeting

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FRIDAY, JUNE 19

8:00-8:55 a.m. BREAKOUT SESSIONS (1)

Breakout I

How Digital Technologies will Change Designing, Modifying, Building and Supporting Our Critical Infrastructure

Craig Harclerode, O&G and HPI Business Development Executive, Aveva

Covid-19 has accelerated the use of digital technology to adapt, survive, and in many cases, thrive in a virtual world. Terms like cloud, big data, analytics, and “going virtual” dominate marketing. New businesses have been created and many have morphed into something much different than 2 years ago. Nowhere is the impact of digital technology more profound than with our critical infrastructure, the electrical grid, the Oil & Gas supply chain, water systems, cities, and transportation to name a few. This presentation will explore the various digital technologies and the challenges and opportunities in designing, building, and supporting our critical infrastructures. A key focus will be on data cyber security and governance.

Breakout II

Development of Electric Vehicle Charging Networks in Oklahoma

Adriane Jaynes, Energy Programs and Clean Cities Coordinator; INCOG

Electric vehicles (EVs) are in the news constantly in 2021 and President Biden has set a goal to build 500,000 EV chargers across the US. Though EVs do not enjoy the same market share in Oklahoma as they do in other places, automakers are setting ambitious goals to phase out the production of internal combustion vehicles. Even today, Oklahomans are purchasing Evs at a greater pace than many people realize, and there are exciting businesses in the state taking part in this growing industry. The presentation will give an overview of the market of electric vehicles and charging in Oklahoma and globally, discuss basic charging types and best practices for installing charging, as well as resources for project planning.

9:00-9:55 a.m. BREAKOUT SESSIONS (1)

Breakout I

Pipeline Safety

Cary Windler, Director, GIS & Integrity Management, Enable Midstream

The presentation steps through pipeline safety, the new regulatory requirements and how technology is bridging those two together. Pipeline safety will be discussed in general with a focus on Integrity Management. The more significant portions of the latest regulatory changes – a.k.a the “Mega-Rule, Part 1” – will be covered at a high level. The regulatory change focus will be on new and more robust material property requirements to support design and predicted failure pressure calculations for an expanding population of vintage pipeline mileage. The final portion of the presentation will show how technology is being developed and adapted to help

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engineers meet these new needs. In-situ applications of non-destructive examination (NDE) tools to compliment laboratory analysis.

Breakout II

How to Protect Your Firm from Cyber Attacks

Tom Kirkham, Founder and CEO of Iron Tech Security

We will outline the orchestration of security layers necessary to secure your firm from malicious actors. We will cover the most recent headlines, who the hackers are, common myths, and much more. The NIST Cybersecurity Framework will be addressed along with the current threats, risks, and vulnerabilities firms are facing today. Learn how to fight hackers - and WIN!

10:00-10:15 a.m.

BREAK

10:15-11:10 a.m.

BREAKOUT SESSIONS (1)

Breakout I

Oklahoma Turnpike Authority Update

Joe Echelle, Assistant Executive Director, Oklahoma Turnpike Authority

We will discuss a Gilcrease update, tolling changes and have a Driving Forward update.

Breakout II

GeoThermal Projects

Jeff Van Hoose, President, Van Hoose Construction

We will discuss how GeoThermal Systems work, and the various applications available. We will also learn about the savings through tax credits and bonus depreciation.

11:15 a.m.-12:15 p.m.

BREAKOUT SESSIONS (1)

Breakout I

Statewide Overview of Major Transportation Projects

Brian Taylor, P.E., Chief Engineer; Oklahoma Department of Transportation

Join us as we discuss the major transportation projects in the state of Oklahoma.

Breakout II

HVAC and Air Sanitizing: How Important is it?

Josh Oelker, Director of Business Development, Steril-Aire

Indoor air quality and airborne disinfection constitute a major health threat impacting billions of people globally, and lead to morbidity and mortality with an annual economic impact of up to \$300-\$400 billion in the US alone. In particular, COVID-19 and the SARS CoV2 virus is currently of concern. The overall universal health concerns surrounding airborne infections and indoor air quality have driven organizations such as ASHRAE and the CDC to recommend strategies to mitigate dissemination of pathogenic microorganisms including greater understanding of the role of the HVAC in the amplification and transmission of infections

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(ASHRAE HVAC Design Manual Chapter 62). The objective of this presentation is to delineate the role of HVAC systems as potential environmental reservoirs for opportunistic pathogens as well as discuss how we can utilize those same HVAC systems for airborne disinfection, indoor air quality improvements and energy savings. The presentation presents data from nearly 30 years of peer reviewed studies demonstrating the efficacy for UVGI in HVAC applications. Along with proper ventilation and filtration, the presentation will elucidate how properly designed and installed Ultraviolet Germicidal Irradiation (UVGI) systems in the HVAC equipment reduced HVAC environment microbial loads, reduces occupant pathogen exposure as well as improves environmental practices. The information discussed will ultimately explain how this leads to overall improved health and function for not only occupants but all involved including building owners.

12:15-1:00 p.m. BREAK

1:00-1:55 p.m. (1)

Oklahoma Transportation Update

Tim Gatz, Secretary of Transportation

Secretary of Transportation Tim Gatz will update attendees on the most current events for the Oklahoma Department of Transportation and Oklahoma Turnpike Authority with results from the latest Legislative session, budget impacts to their programs, as well as where these Transportation Agencies are headed in the future.

2:00-3:00 p.m. (1)

Mars2020 Perseverance Mission

Todd Barber, NASA

The Mars2020 Perseverance mission to the red planet will be covered in detail. Topics to be discussed include a bit on the history of Mars missions at JPL, the scientific motivation for Perseverance, and the challenges of flying to Mars during a global pandemic. The science suite on board this mega-rover will be presented, as well as the engineering challenges involved in getting Perseverance to the Martian surface following the so called “seven minutes of terror” on February 18, 2021. Early mission science results will be presented as well.

3:00-3:15 p.m. BREAK

3:15-4:10 p.m. (1)

Top 11 Legal Hazards for Engineers

L. Wayne Edgar, P.E., Attorney at Law, Pope and Edgar Law Firm, PLLC

The Top 11 Legal Hazards for Engineers: This presentation will cover the primary areas of liability that an engineer incurs when he enters a contract and techniques to mitigate that risk.

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4:15-5:15 p.m. (1)

Message From NSPE President, Tricia Hatley, P.E., F.NSPE

Professional Ethics for Engineers

Rebecca Bowman, Esq., P.E., Senior Director, Ethics and Professional Practice, NSPE

We're going to be examining Canon II, Competence, how it works, some examples of what happens when the canon is NOT followed, and some examples of what the canon means to your professional practice going forward.