



## ISPE Engineers Week Conference

February 22 & 23, 2024

Oxford Suites ~ 1426 S Entertainment Ave ~ Boise, ID 83709

### Wednesday, February 21

**3:30 – 5:00 PM** **ISPE State Board Meeting**  
Maverick Boardroom

### Thursday, February 22

**7:30 – 8:25 AM** **Breakfast/ISPE Membership Meeting**  
Idaho East

**8:30 – 9:20 AM** **Zero Based Regulation (1 PDH)**  
Idaho West  
**Jessica Spoja**  
Executive Officer  
Licensing and Registration Program Manager  
Building, Construction & Real Estate Bureau

**9:30 – 10:20 AM** **Engineering Ethics – an interactive discussion (1 PDH)**  
Idaho West  
**Julia Harrod, PE, F.NSPE**  
NSPE Vice President

Using two case studies from the NSPE Board of Ethical Review (BER), we will discuss the ethical issues around the PEs obligation to only practice in their areas of competency. The discussion will include a brief introduction to the BER and how you as an NSPE member can leverage this significant resource. Come prepared for a lively discussion!

**10:30 – 11:20 AM** **Risk Management (1 PDH)**  
Idaho West  
**Rob Anderson**  
Anderson Julian & Hull LLP

**11:30 – 12:20 PM** **Emerging Support Technologies (1 PDH)**  
Idaho West  
**Matthew Byrd**  
Manager - Nexus 3D Consulting LLC

**12:30 – 1:30 PM** **Lunchid**  
Idaho East  
**Student Awards, New PE's**  
**NSPE – Elevating the Profession (0.5 PDH)**  
**Julia Harrod, PE, F.NSPE**  
NSPE Vice President

**1:30 – 2:00 PM** **Break**

**2:00 – 2:50 PM** **The Road Ahead: Zoning and Transportation Strategies for Urban Growth (1 PDH)**  
Idaho West  
**Jacqueline Walton**  
Partner – Holland & Hart

**3:00 – 3:30 PM** **Why SH-16? What have been the challenges and how is design and construction going (0.5 PDH)**  
Idaho West  
**Merrill Sharp**  
Project Manager – ITD Bonding Office

**3:40 - 4:30 PM**

Idaho West

**Boise Airport (1 PDH)**

**Beth Sumner**

**Engineering Deputy Director/Senior Manager - Boise Airport**

A summary of the completed projects for the BIO Upgrade Program and a look ahead at what is planned for the next 1-2 years.

**4:45 – 6:00 PM**

Oxford Social Area/  
Idaho East

**No Host Bar and Social Hour**

**Friday, February 23**

**7:30 – 8:00 AM**

Idaho East

**Breakfast**

**8:00 – 8:50 AM**

Idaho West

**Water Quality & Quantity (1 PDH)**

**Cathy Cooper, PE**

**Director of Engineering, Veolia Water Idaho Operations**

This presentation focuses on current challenges facing Southwest Idaho water utilities, including quantity and quality challenges. Drought, growth, aging infrastructure, and regulations for emerging contaminants (lead/copper and PFAS) will all be addressed. In addition, a look at "what did you not know about water systems until you started working at one" will show the lighter, and more challenging side of what happens at a water system.

**9:00 – 9:50 AM**

Idaho West

**The Effects of Restaurant Drive-Through Vehicle Mobile Emissions on Air Quality (1 PDH)**

**Dr. Sondra Miller, PhD, PE**

**Associate Professor - Department of Civil Engineering – Boise State University**

Studies and regulations on vehicles have become more prominent as concerns continue to rise over mobile emissions. Most recognizable is the U.S. EPA Near-Road monitoring network that began in 2010. The focus of most air quality studies has been vehicular traffic on freeways. Drive-through sales skyrocketed in 2020, accounting for 90% of restaurant revenue and have continued to remain pivotal in fast food restaurant sales contributing to 75% of total revenue. This demand has brought the question of how much drive-throughs contribute to mobile emissions, specifically in the form of PM<sub>10</sub> and PM<sub>2.5</sub>. It is common for drive-throughs to be in more centralized urban areas resulting in more people living within influence range of particulate matter.

This study monitored traffic for a local drive-through to model the emissions using U.S. EPA MOVES and compared it to a section of freeway (I-84). This study estimated the number of people exposed to drive-through emissions within a 23-square mile area in addition to emission loading rates. U.S. Census data for 2020 was overlaid in ArcGIS with drive-through locations identified from Google Maps. Drive-throughs and the freeway were then given a 986 m buffer for the particulate matter spatial extent. The buffer then enabled statistics of people living within exposure range of the two major contributors to be estimated.

This resulted in peak PM<sub>10</sub> and PM<sub>2.5</sub>, showing that it would require approximately 9 to 14 drive-throughs to generate equivalent peak hour emissions for an equidistant portion of the freeway. Daily loading rates were calculated to account for varying traffic patterns throughout a full day. Results suggest that it would require approximately 22 to 32 drive-throughs to equal daily emissions of the freeway. Daily weekday loading rates were assigned to all 67 drive-throughs in the 23-square mile study area and applied to the freeway. An estimated 120,464 people experience peak particulate matter exposure in their homes, the majority of which (93,299 or 78%) results from their proximity to drive-throughs. The aggregate influence of drive-throughs affects nearly three times as many people compared to a freeway despite their relatively minute individual emissions

**10:00 – 11:20 AM**

Idaho West

**Boise Geothermal (1.5 PDH)**

**Jon Gunnerson**

**Geothermal Coordinator at City of Boise**

**11:30 – 12:20 PM**

Idaho West

**What is a LLM and Why Should I Care? (1 PDH)**

**Casey Kennington, PhD**

**Associate Professor - Computer Science – Boise State University**

What is the most quickly adopted technology in history? It's not gun powder, email, or TikTok; it's ChatGPT. ChatGPT is a kind of Large Language Model (LLM). Since late 2022, LLMs have been changing education, research, and the workforce in positive and negative ways. In this talk, I explain how LLMs work, what makes them learn "meaning" of language (and how they learn differs from how human children learn), and what OpenAI did to make ChatGPT so powerful. Finally, I give some examples of what LLMs can be useful for, but also some very high-profile examples of when you should not use them.

**12:30 – 1:00 PM**  
Idaho East

**Lunch**

**1:00 – 1:50 PM**  
Idaho West

**Micron's Boise Expansion (1 PDH)**  
**Jeff Binford**  
**Micron Technology**

## Biographical Sketches

### **Jessica Spoja**

Jessica Spoja of the Idaho Division of Occupational Licenses has been serving as the Interim Executive Officer to the Idaho Board of Professional Engineers and Professional Land Surveyors since September of 2023. Her primary goal has been to foster strong connections with stakeholders. She believes that by working together collaboratively, we can achieve excellence in our professional endeavors.

### **Julia M. Harrod, P.E., F.NSPE**

Julia is President of MWM DesignGroup, an interdisciplinary firm providing architecture, landscape design, civil engineering, land surveying and permitting services throughout Texas. As president of the company, she maintains primary responsibility for the firm's strategic initiatives and financial operations. She obtained her degree in Architecture from MIT in 1990 and her Masters in Engineering at the University of Texas in 1994.

She is passionate about her chosen career and devotes significant effort to promoting the engineering profession and education in math and science. She is currently serving as NSPE 2023-24 vice president and will be the NSPE 2024-25 president. She has been actively involved with NSPE since 2001 when she joined Travis chapter boards and committees in Austin Texas.

### **Rob Anderson**

Mr. Rob Anderson is founder and senior partner of the attorney office of Anderson, Julian & Hull LLP. He has developed extensive experience in all facets of insurance defense and construction law, as well as professional liability and real estate. He has been an AV rated attorney by Martindale-Hubbell since the mid-1980s and is licensed to practice in Idaho.

Mr. Anderson has been recognized by his peers in Best Lawyers in America and Mountain States Super Lawyers. He has been named Lawyer of the Year by Best Lawyers eight times, including most recently as Lawyer of the Year for Construction Law and Personal Injury Litigation Defendants. He has also been selected by the Mayor of Boise to serve on the Design Review Committee for the City of Boise and is serving his second term on the Board of Directors for the Boise Consumer Coop.

### **Matthew Byrd**

Matthew is a visionary leader, influencer, and expert in the world of construction technology and reality capture. He is devoted to enabling companies worldwide to leverage new technologies and workflows to convert real-world project data into digital environments. His mission is to inspire change through innovation and the implementation of cutting-edge technologies.

He founded Nexus 3D Consulting in 2016 and leads a team of geospatial and reality capture specialists focused on the Built Environment. With hundreds of clients and over 600 completed projects spanning 40 states and several countries, his firm has established a global reputation for expertise and innovation in just a few years.

In 2020, Matthew founded the "Reality Capture Network" which has grown into the largest community of reality capture professionals. RCN started as a podcast, and now offers an online education center with a growing library of digital content and hosts an annual conference where experts from around the world gather to share, learn, and network with the community.

Matthew's goal is to help build a better future. He envisions a vastly different work environment in 20 years and is driven to drive that change by inspiring others to proactively shape the future. In his words, "We have the power to build the future or watch it unfold. The choice is ours."

### **Jacque Walton**

Jacque is a real estate partner with Holland & Hart LLP out of the Boise office. Her commercial real estate practice focuses on real estate acquisition and sales, title review, commercial leasing, due diligence, financing, and development. Jacque's zoning and land use practice includes initial suitability determinations, obtaining entitlements, and compliance matters. She has represented a wide range of clients from start-ups to publicly traded companies in various industries, including agricultural, industrial, multifamily, retail, renewable energy, healthcare, and hospitality.

**Merrill Sharp**

Merrill is a project manager with the Idaho Transportation Department in the Transportation Bonding Office. He has 33 years of experience with the department in design and construction, with the last five years managing GARVEE and TECM projects. Merrill has overseen several large expansion and interchange projects around the state. These projects include US-95/SH-53 IC and Garwood Rd; US-95 Granite North; I-84 Burley IC; I-84 Heyburn IC; SH-16 (I-84 to Franklin Rd; Franklin Rd to Ustick Rd; Ustick Rd to US-20/26; SH-44 IC; I-84 System IC & Franklin Rd IC, Ustick Rd IC; and US-20/26 IC ). Several of these have been built or under construction today. When not working, Merrill enjoys time spent with his family, traveling, spending time in the Idaho outdoors, and playing with his jeeps.

**Beth Sumner**

Beth graduated from USAF Academy with a degree in Engineering Sciences. She served more than 7 years on Active Duty in the USAF before she transferred to the National Guard. She worked as a Project Engineer for MotivePower for 3+ years, before returning to full time employment for the Federal Government as a civilian employee at the Idaho Air National Guard as the Base Civil Engineer. She served in this position for 3 years and then was promoted to Director of Mission Support. She left her full-time position at the Idaho Air National Guard for a Project Management position at Hewlett Packard in July 2022. She served in this role until September of 2023, when she was hired at the Boise Airport as the Deputy Director of Engineering and Planning. Beth retired from the Idaho Air National Guard in October of 2023 after serving 26+ years in the US Military.

**Cathy Cooper, PE**

Cathy Cooper has been a licensed Professional Engineer in Idaho since 1998 and has been working as a civil engineer for nearly 30 years. Cathy is currently the Director of Engineering for the water company serving Boise and surrounding areas. She has focused her career on leading engineering groups and water system engineering including preparing detailed hydraulic calculations; designs for storage tanks, pump stations, pressure reducing stations, pipelines, and well houses; water system Master Facility plans, hydraulic models, and project cost estimates.

Cathy has worked in both Consulting and on the Owner's side. She has years of experience in managing engineering groups including 8 years as the managing partner of SPF Water Engineering, and 8 years as the Director of Engineering for the Water Company serving Boise and surrounding areas, currently Veolia Water Idaho.

Cathy's education includes a BSCE from the University of Colorado at Boulder and an MSCE from the University of Washington in Seattle. She was a National Science Foundation Fellow during her Masters Degree Studies.

**Dr. Sondra Miller, PhD, PE**

Dr. Sondra Miller is an Associate Professor of Civil Engineering at Boise State University. She is a licensed professional engineer in the states of Idaho and New York. Dr. Miller the first woman appointed to serve on the Idaho State Board of Professional Engineers and Professional Land Surveyors. She also served as Associate Dean in the College of Engineering from 2018 to 2021. Dr. Miller earned her Ph.D. in Environmental Engineering from the University of Iowa, a M.S. in Environmental Engineering and B.S. in Civil Engineering from the State University of New York at Buffalo. She was an Associate Engineer with the Idaho Department of Environmental Quality prior to joining Boise State University. Dr. Miller's field of research is in the fate and transport of organic contaminants in natural and engineered systems. She is currently leading several research projects sponsored by the BioSolutions USA, City of Boise, and National Science Foundation.

**Jon Gunnerson, PE**

Jon is the City of Boise Geothermal Coordinator Civil Engineer managing various public works projects relating to energy, water, and climate. He primarily oversees Boise City's geothermal program, providing geothermal water to downtown buildings and facilities. Manage operations, maintenance, regulatory, and strategic planning of the geothermal system. He also works closely with other local and national heating districts and across the geothermal community.

**Jeff Binford**

Jeff has over 20 years of experience leading Industrial Engineering and Operations teams at multiple Micron locations. Jeff has a bachelor's degree in Industrial Engineering from Arizona State University. He has been a part of a factory start up in both Utah and Singapore. He currently works as the Senior Director of the US Expansion Planning team overseeing both the Idaho and New York expansion projects. Jeff is passionate about building teams and culture. Outside of work, he enjoys spending time with his family of six with four kids stretching from elementary school to high school.