



2021 Annual Conference
Register online @
oregonengineers.org

PROGRAM: THURSDAY - May 6th

Live Virtual Professional Engineers of Oregon
Annual Conference via Zoom - May 6 & 7, 2021
Register Today - www.oregonengineers.org

Time	Technical or Professional	Presentation Topic	Abstract
8:30-9:30	Professional - Ethics / Human Resources / Diversity	<p>Keynote <i>The Value of Unity</i></p>  <p>Erika McCalpine Director OSU-Cascades Diversity, Equity & Inclusion Laboratory</p>	Erika McCalpine will help set the stage for this year's conference. Her clear reminder that, together, we can solve great problems will resonate with engineers from across all disciplines.
9:45-10:45	Technical - Planning / Civil / River Ecosystems / Hydrology	<p><i>Bend Whitewater Park: Engineering, Commitment and a Quarter Million River Users</i></p> <p>Brian Hudspeth, Bend Parks and Recreation; Kevin Timmins, P.E., OTAK</p>	To replace a hazardous dam in the middle of the Deschutes River in Bend, Oregon, a decade-long dream became a reality with the construction of the Bend Whitewater Park, which opened in 2015. This presentation by the engineering firm and the park and recreation district will detail the background, constraints, design and permitting, how it works and the results of the past five years of use.
11:00-12:00	Technical – Energy / Civil	<p><i>Electric Grid Transmission in the Pacific NW: How the West is Equipped for the Next Energy Crisis</i></p> <p>Kelly Meyers; Grid Operations Manager, PacifiCorp</p>	Learn about the ways the Northwest is uniquely situated to handle energy crisis events similar to those experienced recently in Texas. We will discuss how the generation diversity and wide geographic electric grid footprint of the Western Interconnection helps to mitigate widespread blackouts.
12:00	TopCon Corporate Sponsor - Open Lunch		
1:00-2:00	Technical - Civil / Structural	<p><i>Latest Trends In The Use of Precast Concrete And Hybrid Concrete Panels In High End Buildings</i></p> <p>Dusty Andrews, PE; Engineering Director, Knife River</p>	Mr. Andrews will present on the large variety of precast concrete products for use on bridges and buildings of many different types, including technologically advanced building shell products with highly sophisticated finishes, shapes and textures. Building shell products will include multi-layer designs with insulation included as part of the precast shell panels and will show the high degree of creativity in panel shapes being produced in today's precast industry to achieve good construction value and shorter schedule construction.
2:15-3:15	Technical - Water / Civil	<p><i>Water Resource Conservation through Irrigation Piping</i></p> <p>Kevin Crew, PE; Owner, Black Rock Consulting</p>	Faced with the challenges of seasonal drought, long-range climate uncertainty, and water needed to support threatened and endangered species, the communities of Central Oregon recognize water as a critical resource. Guided by engineering ingenuity, significant opportunities for water conservation are currently being realized with large-scale irrigation piping projects. This presentation will highlight example projects and explain the far-reaching benefits of piped irrigation systems.
3:30 - 4:30	Technical - Mechanical / AI / Transportation	<p><i>Daimler - Autonomous Freight Trucks</i></p> <p>Suman Narayanan; Director of Engineering, Daimler Trucks North America</p>	Mr. Narayanan will present on the latest technologies being incorporated into freight vehicles being produced by Daimler, including autonomous driving trucks. He will explain how these new vehicles are being designed to deliver materials on optimum schedules with increased safety and reduced transportation costs.

END OF DAY ONE



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PROGRAM: FRIDAY - May 7th



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8:30-9:30	Professional - Politics	<i>Engineers and Public Service: Where Technical Expertise Meets Elected Office</i> Shannon Wedding, PE, City Councilor	Engineers are increasingly seeking elected public positions. Their technical knowledge of important public issues such as infrastructure and development empowers engineers to make decisions that are in the best interest of the public they serve. City of Redmond City Councilor, Shannon Wedding, PE, will discuss the benefits and hurdles of bringing an engineering perspective to an elected position.
9:45 - 10:45	Technical - Civil / Hydrology / Environmental / Irrigation	<i>Opal Springs Fish Ladder</i> Finlay Anderson, Kleinshchmidt; Kevin Whittier, PE, Jacobs; Brady Fuller, PE, Jacobs; Vince Rybel, PE (retired)	Many partners, stakeholder funders, and project contributors came together to make the Opal Springs Fish Ladder project a success. This presentation will describe the project history and then focus on engineering and technical challenges and solutions to those problems. The project was completed, and the first fish passed through the new ladder in November 2019. The geotechnical and structural issues, along with difficult site access made this project challenging in many ways.
11:00-12:00	Technical - Nuclear / Energy	<i>Advanced Nuclear: Where We Are and Where We Are Going</i> Dr. Brian Woods, PHD; Professor and Head, School of Nuclear Science and Engineering, Oregon State University	In the United States, commercial nuclear power reactors contribute approximately 20% of our electricity supply using technologies developed in the 1950's and 1960's—pressurized and boiling water reactors. A number of advanced nuclear reactor concepts have been developed over the last decade which can address the economic, environmental and societal pressures impacting energy generation in the US. This presentation will examine a number of these concepts and their importance as well as offering some thoughts on what the future might hold for advanced nuclear.
12:00-1:00	LUNCH - PEO Annual Members Meeting, Awards & Installation of Officers NSPE President Tricia H. Hatley, PE, F.NSPE & PEO President Tom Headley, PE		
1:00-2:00	Professional - National / Legislative / Infrastructure	<i>NSPE Update on Federal Infrastructure Spending and Legislative Action</i> Stephanie Hamilton Manager, Government Relations and Advocacy & Margaret Edwards Policy and Advocacy Associate	Two of NSPE's top staff will provide their perspectives from their vantage point near Washington, D.C. as the current administration engages in long-range infrastructure funding planning. This presentation will open with a brief summary of the PEO's state-level legislative advocacy, led by Columbia Chapter VP, Ralph Cohen, PE.
2:15-3:15	Technical/ Professional - Public Agency / Engineering / Infrastructure	<i>Progressive Design Build Contracting in Practice: Murphy Road Corridor</i> Project Team: James Albin, Justin Mason, Patrick Keller, DOWL Kerry Kuenzi, K&E Excavating, Inc. Ryan Oster, Deedee Fraley, City of Bend	This presentation will highlight the practical implementation of Progressive Design-Build (PDB) contracting on the City of Bend's Murphy Road Corridor project, where the owner, contractor, and consultants were able to seize upon the unique features of the PDB contract to deliver the project two years ahead of schedule and make the best possible use of the available funds.
3:20-4:00	Inspirational	<i>Oregon Tech and OSU Student Experience</i> Cynthia Roe, Oregon Tech Esther Vega, Oregon State Un.	Students share their experience to solve global challenges, and partnerships that ensure responsiveness to Oregon and beyond.

CLOSING COMMENTS & CONCLUSION – PRESIDENT, TOM HEADLEY, PE

MEET OUR PRESENTERS – thank you!

Erika McCalpine is an instructor and program lead of business administration at OSU-Cascades. After 15 years in corporate business Erika turned to teaching business at the University of Alabama with noted success and recognition. Erika now teaches business classes while working to advance diversity, equity and inclusion among her students, colleagues and the community at large.

Brian Hudspeth Brian is the Development Manager for the Bend Park and Recreation District, he oversees and leads the design and construction teams for the District. He is responsible for the District's Capitol Improvement Plan and has been with the District since 2013. He holds an Associates of Applied Science degree from Central Oregon Community College and been in the construction industry for the last 27 years.

Kevin Timmins, PE has spent his entire career working in surface water systems, including streams, wetlands, and urban drainage systems. Kevin earned his Bachelor of Science, Environmental Engineering at Tulane University and holds a Master of Science, Environmental Engineering from Washington State University.

Kelly Meyers is the Manager of Transmission Grid Operations. Kelly Myers has worked in the Electric Utility Industry for 10 years, all time spent in transmission grid operations. Graduate of the University of Washington with an Electrical Engineering degree, she started out her career with PacifiCorp as a Grid Operations Engineer. Her current roles is the manager of real-time reliability transmission grid operations.

Dusty Andrews, P.E., Engineering Director (Knife River Prestress, Harrisburg, OR) Dusty oversees the engineering departments in both Oregon and Washington. He has been with Knife River/Morse Bros for 20 years and came to Knife River after graduating from Oregon State in 2001. He is also the current Structural Engineers Association of Oregon president. Within industry, Dusty has served on several Precast/Prestressed Concrete Institute committees including the Board of Directors, Industry Handbook, and the Technical Activities Council.

Kevin Crew, P.E. is the Owner and Principal Engineer of Black Rock Consulting in Bend. With over 33 years of experience in water resources and hydroelectric engineering, Kevin is widely recognized as an industry leader for irrigation and municipal water projects.

Suman Narayanan Director of Engineering - Automated Technology Group at Daimler Trucks North America. Suman is an industry expert in the field of commercial vehicle safety and a transformational leader who strives to achieve a goal of zero fatalities on North American highways with the help of highly automated driving. Skilled in leading research, engineering and development activities to deliver highly robust and reliable class 6 through class 8 truck systems. Proud of his strong sense of social and ethical responsibility to achieve a sustained adoption of emerging technologies.

Shannon Wedding, PE City Councilor has been a Civil Engineer for 16 years with a majority of her career focused on critical infrastructure including potable water, wastewater and water reuse, including her role as Managing Engineer for the City of Houston Drinking Water Operations and Planning and Development Services. When she moved to Oregon, she brought with her valuable perspectives gained while working as a public servant. Today, she is a member of Redmond's City Council.

Finlay Anderson is a Senior Regulatory Advisor with Kleinschmidt Associates who specializes in Federal Energy Regulatory Commission (FERC) licensing and compliance in the West and Northwest. In addition to managing licensing projects and advising on strategic challenges, Finlay facilitates stakeholder processes, including settlement agreements and technical working groups.

Kevin Whittier is Design Manager and Structural Engineer with Jacobs Engineering Group in Corvallis, Oregon. He manages teams delivering infrastructure designs including dams, fish passage, reservoirs, and hydraulic structures.

Brady Fuller is Client Account Manager and Project Manager with Jacobs Engineering Group in Bend, Oregon. He is responsible for Jacobs' business development within the People and Places Solutions Line of Business in the Oregon market and manages multidisciplinary water projects.

Vince Rybel is a civil/geotechnical engineer who worked 42 years for CH2M based in Corvallis and 6 years part time for Jacobs Engineering Group. He was involved with the original design and construction of the Opal Springs Hydro Electric Project 1981-1985 as well as the fish ladder design and construction discussed in this presentation.

Dr. Brian Woods, PHD Brian Woods is the Head of and a Professor in the School of Nuclear Science and Engineering at Oregon State University. He holds a B.S. in Mechanical Engineering (1988) from the University of Virginia, an M.S. in Nuclear Engineering (1999) from the University of Maryland, and a Ph.D. in Nuclear Engineering (2001) from the University of Maryland. His areas of interest include the design and safety of small and intermediate modular nuclear reactors, and advanced fission and fusion reactor concepts as well as the thermal fluid phenomena important to these designs. Brian has worked at the U.S. Department of Energy as an engineer within the Office of Environmental Restoration as well as serving for four years in the U.S. Navy as a diver. Prior to coming to Oregon State, he worked as a Nuclear Safety Analyst at Dominion Energy's Innsbrook Technical Center outside of Richmond, Virginia. Brian has been at Oregon State University since 2003 teaching undergraduate and graduate courses on applied thermal-hydraulics, nuclear reactor safety, fluid dynamics, nuclear rules and regulations, and the societal aspects of nuclear technology. He has been actively involved in thermal-hydraulic and reactor safety research projects sponsored by the NRC, DOE and IAEA.

Margaret Edwards NSPE Policy and Advocacy Associate is responsible for advocating on behalf of and engaging National Society of Professional Engineer (NSPE) members in advocacy in different policy areas, including the defense of professional licensure, emerging technologies, and infrastructure. As part of this task, she tracks, and monitor legislation and regulations using Quorum and create and maintain relationships with federal and state level legislative staff to advance NSPE's positions. Additionally, she develops and create content, examples include a redesigned online advocacy center and latest news updates for the NSPE website. Margaret also acts as a staff liaison for and support NSPE's Committee on Policy and Advocacy and NSPE's Emerging Technologies Task Force.

Stephanie Hamilton Manager, NSPE Government Relations and Advocacy Government has decade of experience developing and executing successful legislative agendas, policy priorities and strategies, in support of organizational goals. Continually fostering a robust network of contacts on Capitol Hill, in federal agencies, and within the broader policy and advocacy space. Experienced professional skilled at developing effective relationships with key stakeholders.

Deedee Fraley, PE is a City of Bend Project Manager who joined the Murphy Road Corridor effort midway through the compressed project schedule and successfully led the transition and delivery of the highly complex fourth and fifth Guaranteed Maximum Price work packages to City Council.

Kerry Kuenzi is the president and co-founder of K&E Excavating Inc. who brought his broad regional experience with alternative contracting methods to lead the construction of the Murphy Corridor Project.

Steve Noble, PE, DOWL's Transportation Vice President, Steve, and his team at DOWL developed the design elements for the Murphy Corridor project.

Cynthia Roe, a senior in the Civil Engineering program at Oregon Tech. Served as the President of the Oregon Tech ASCE student chapter, been involved in the Oregon Tech ITE student chapter, and participated in student government during my four years at the university. Been privileged enough to have multiple internship experiences and am hoping to add to this experience as she begins her graduate studies. Equity, diversity, and inclusion are all causes she is passionate about and tries to speak to whenever possible, this will undoubtedly man be one of her greatest contributions to civil engineering as she enters the professional sphere.

Esther Vega ('21 B.S., Industrial Engineering) saw firsthand how the K-12 educational experience in Oregon differs for minority students. That's why she focused her honor's thesis on connecting teachers and minority parents through community programs. Applying an industrial engineering perspective, she analyzed the system that creates biases, designed and ran tests, and wrote recommendations to address the issues. Drawing upon her experiences as an English language learner, she hopes to continue optimizing systems in healthcare, education, and industrial systems in the U.S.

