

OKLAHOMA ENGINEERING CONFERENCE

JUNE 15-16, 2023

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OWASSO, OK

MEET OUR SPEAKERS

Todd Barber is a JPL senior propulsion engineer, spending two decades as lead propulsion engineer on the Cassini mission to Saturn, following part-time work on the Mars Exploration Rover (MER) mission, Deep Impact mission, and the Mars Science Laboratory (MSL) mission, which landed the large rover Curiosity on the red planet on August 5th, 2012. Cassini was launched on October 15, 1997 on its two-billion-mile, seven-year journey to the ringed planet. It “took the plunge” into Saturn’s atmosphere in 2017 after thirteen years in orbit around Saturn. The



MER team launched twin rovers to the red planet in June and July of 2003, and Spirit and Opportunity lasted six years and fourteen years, respectively, into their three-month missions. Todd also worked as the lead impactor propulsion engineer on Deep Impact, which successfully crashed into Comet Tempel-1 on Independence Day, 2005, at twenty-three-thousand miles per hour. Todd recently completed working on the Dawn mission, an ion propulsion mission to the two largest main-belt asteroids, Vesta and Ceres. He also recently began supporting the Soil Moisture Active Passive (SMAP) mission and was the Mars2020 propulsion lead engineer for operations. Much to Todd’s delight, he is now supporting the Voyager mission as well, more than forty years after launch.

Mr. Barber worked on the Galileo project for over seven years and his primary responsibility was getting Galileo into Jupiter orbit on December 7, 1995. Todd also worked part-time on the Space Infra-Red Telescope Facility (SIRTF) mission and on the Stardust mission, as well as the Mars Sample Return mission and a Mars airplane study. Todd received NASA’s Exceptional Achievement Award in 1996 for his work on Galileo. In 2018, Mr. Barber was also honored to receive NASA’s Exceptional Public Service Medal for heading up Cassini’s propulsion team for nearly two decades.

Mr. Barber is a native of Wichita, Kansas, and attended MIT between 1984 and 1990, obtaining B.S. and M.S. degrees in aerospace engineering, with a humanities concentration in music. He is also a composer of church choral music, with two pieces published to date. His hobbies include singing charitably and professionally, playing the piano, snagging degree confluences (exact integer latitude/longitude intersections), visiting all the U.S. tri-state corners and national parks, playing basketball (though it’s been a while), and amateur astronomy.

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Brooke Caviness, P.E. is the Transportation Capital Planning Engineer and Lead Engineer of the Stormwater Design Group for the City of Tulsa. She is a registered Professional Engineer in the State of Oklahoma and a Certified Floodplain Manager. Ms. Caviness has a BS and MS in Civil Engineering from Oklahoma State University. Ms. Caviness has been with the City of Tulsa since 2007.



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JORGE DELUCCA has been working for OSHA for 19 years, as a bilingual (Spanish) Industrial Hygienist, first at the OSHA Dallas Area Office and currently at the Oklahoma City Area Office where he is the Compliance Assistance Specialist and Voluntary Protection Program Coordinator. He did a 20-year career in the US Air Force, most of it as a Bioenvironmental Engineer. After he retired, he worked as an Environmental, Safety and Health Engineer in private industry. He was an adjunct instructor of Environmental Science and Ethics at the University of Phoenix, Oklahoma City Campus before he joined OSHA. He has a bachelor's degree in Chemical Engineering from the University of Puerto Rico, a Master of Science in Environmental Management from the University Of Oklahoma Hudson College Of Public Health and a Master of Arts in Business Administration from Webster College. He is the author of the book *A Few Great Scientists: From Alfred Nobel to Carl Sagan*.



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JOE ECHELLE, P.E. is the Assistant Executive Director for Maintenance, Engineering, and Construction of the Oklahoma Turnpike Authority. He began his career with the Oklahoma Department of Transportation as an engineer in training in 2001 then a draftsman, a construction surveyor, the Resident Engineer in Stillwater and subsequently advanced to be the Construction Engineer for ODOT's Division 4. He was instrumental in the construction of the Interstate 40 Crosstown project in Oklahoma City along with the deconstruction and bridge beam recycling project of the old crosstown expressway bridge. In 2016 Echelle began work at the Oklahoma Turnpike Authority as the Director of Construction to manage the Turnpike Authority's annual capital improvement construction projects and the Driving Forward Turnpike Improvement Program.



Echelle earned a bachelor's degree in Civil Engineering from Oklahoma State University in 2005 and is a registered Professional Engineer. In 2010 he completed his graduate degree at OSU and received a Master of Business Administration. He has received several awards for highway construction and design from the American Concrete Paving Association and the Asphalt Paving Association. He is a member of the Governors Highway Construction Materials Technician Certification Board, the International Bridge, Tunnel and Turnpike Association as well as an adjunct faculty member at

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Oklahoma State University teaching surveying to Civil Engineering and Construction Management majors. He resides in Stroud, Oklahoma with his wife Lacey, son Grant, and daughter Taryn.

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TIM GATZ was appointed Secretary of Transportation by Gov. Kevin Stitt in early 2019 and the Oklahoma Transportation Commission named him Oklahoma Department of Transportation Executive Director, effective April 1, 2019.



Prior to that appointment, Gatz was named the Executive Director of the Oklahoma Turnpike Authority in 2016 and previously served more than two decades at the Oklahoma Department of Transportation. Gatz started his career at ODOT as a Drafting Technician in 1990. Then in 1992, he became the Enhancements Program Coordinator and moved up to Special Projects Manager in 1997. In 2000, he became Division Manager of the Project Management Division where he was instrumental in the development of ODOT's Eight-year Construction Work Plan.

Gatz was promoted to the Senior Staff position of Director of Capital Programs and Information Management in 2006 and led the department's coordination with county governments to develop and deliver the County Improvements for Roads and Bridges Program which provides dedicated funds for high-priority county transportation projects statewide. He served as Deputy Director from 2013 until his appointment to OTA in 2016.

Gatz earned a bachelor's degree in landscape architecture from Oklahoma State University in 1989 and is a registered professional landscape architect. He has received several honors including the Oklahoma Good Roads & Transportation Association's Bill Skeith Stewardship Award, the Governor's Public Service Award and the Federal Highway Administration's Partners In Quality Award. He is a member of the American Association of State Highway and Transportation Officials, the International Bridge, Tunnel and Turnpike Association and the American Society of Landscape Architects.

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KATHY HART is the Executive Director of the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors. She is a graduate of Oklahoma State University and began working for the Board in 1990. In 1994 Kathy was named the Board's Executive Director. For the past 30 years she has also been active with the National Council of Examiners for Engineering and Surveying, serving on and chairing numerous national committees within NCEES.



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Morgan Jones is a licensed architect and nonprofit founder, consummate Project Manager, Design-Thinker, and Strategic Consultant turned Social Entrepreneur. Named to the Journal Record's inaugural "Power List of Women in STEM", she is recognized for her ability to develop formal and informal coalitions to address workplace and community problems—driving social and structural change. In her work with the STEAM Engine, she is working with state and community leaders to address STEM workforce shortages through strategic investments in K-20 STEM and Arts education and work-based learning initiatives through an Impact Partnership Grant funded by the Workforce Innovation and Opportunity Act. She is a sought-after speaker, strategic consultant, and task-force member, recently appointed to the Career Pathways Committee of the Governor's Workforce and Economic Development Council. Jones holds a Bachelor of Architecture from Oklahoma State University and a Master of Business Administration from Oklahoma Christian University.



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Ric Leist, P.E. holds a Bachelors Degree in Mechanical and Aerospace Engineering from Oklahoma State University and a Masters in Mechanical Engineering from Washington University in St. Louis. He has held various engineering positions over 43 years across 53 aircraft platforms and sub-models performing stress, finite element, fatigue, load spectra, and damage tolerance analysis for McDonnell Aircraft, St. Louis, Cessna-Textron Aircraft, Wichita, and Boeing Aircraft, Wichita and Oklahoma City. He has extensive experience in analytical process development, failure research / prediction, and service life and structural monitoring program direction. During his career he has trained dozens of engineers in modern fatigue and damage tolerance analyses. He retired as a Sr. Lead Engineer from Boeing in 2021 and began R. Leist Engineering, PLLC. Ric is a voting member of the SAE Fatigue, Design, and Evaluation committee and ASTM Committee/Subcommittees for Eo8 (Fatigue and Crack Growth), Fo4 (Medical Implants), and F42 (Additive Manufacturing).



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Mark A. Lobo, P.E. has a BSME from Oklahoma State University and has been a licensed professional engineer in Oklahoma for 40 years. He has held positions of engineering responsibility for product designs as varied as military aircraft and electronics, commercial food service equipment, computer tape drives, well logging equipment, and control valves. He is Principal for Lobo Engineering PLC and Managing Director of Valve Systems International, LLC. Mark has extensive experience in control valve performance and reliability, with a focus on severe service fluid process applications.



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Jennifer McCollum, APR, is the executive director of the Oklahoma Engineering Foundation. She has a bachelor's degree in political science and speech communication and 40 hours of graduate work in history and English. She has served as the spokesperson for several government agencies and as the inaugural executive director of two advocacy nonprofits. She holds accreditation in public relations. She lives in Oklahoma City with her husband and three children. In her free time, she enjoys writing and photography.

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Bret McElroy is a graduate of Oklahoma State University with 15 years' experience helping manufacturers implement automation and quality control measures. As an Account Manager at Creaform he specializes in 3D scanning and uses his expertise to help manufacturers meet production demands without sacrificing quality. After spending over a decade away from Oklahoma, he has returned to the Sooner State to raise his family and help regional manufacturers.

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Michelle Merchant is the Sustainability Programs Planner at Indian Nations Council of Governments (INCOG). In this role, she serves as Director for Tulsa Area Clean Cities Coalition, a US Department of Energy program hosted at INCOG, with the goal of enhancing the nation's economic, environmental, and energy security by working locally to advance affordable, domestic transportation fuels, energy efficient mobility systems, and other fuel-saving technologies and practices. Michelle graduated from the University of Tulsa as the 2021 Outstanding Senior in Environmental Policy, with a dual major in Economics. She has also studied Sustainable Development at the School for Field Studies in Costa Rica, where she developed a special interest in environmental and energy justice issues.

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Dr. Emily Mortimer is a rural Missouri native with a B.S. in Biology from Missouri State University, M.S. in Teaching, Learning and Leadership from OSU, and a Ph.D. in Curriculum and STEM from OSU. Her professional experience includes 14 years in informal education at the Tulsa Zoo and Dickerson Park Zoo. Over the years, her main job duties included behavioral training for various bird and mammal species, volunteer management, community partnerships, program development, curriculum writing, and education department management. Ten years ago she was a member of the founding team for the teacher professional development program, SENSEsational Science, which is now a TRSA program and has served over 400 Oklahoma teachers and given out over 32,000 hours of PD.

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Heather Ormonde is the cofounder and serves as the chair for the Oklahoma Lean Construction Community of Practice and is an LCI and AGC-approved Lean Construction instructor. She started her lean journey over a decade ago with the completion of her Lean Six Sigma Green Belt certification and was immediately immersed in the philosophy of improving what we do every day and eliminating waste to create value. Since then, her passion has been leading positive change in numerous industries: Healthcare, Nonprofits, Industrial, Construction, and Design industries and coaching others starting on their lean journey. Heather holds a bachelor's in interior design and a master's in construction management.



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Lars Ostervold, P.E. is a Senior Project Manager with Jacobs' Tulsa office. He is a registered Professional Engineer in the State of Oklahoma and recently retired from the Oklahoma Army National Guard after 27 years of service. Lars holds a BS in Civil Engineering from Tulane University, a MS in Engineering Management from Missouri S&T, and a MS in Strategic Studies from the US Army War College.



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Levi Patrick is a 7th generation Oklahoman with experience as a teacher, instructional coach, and curriculum writer. After teaching in Putnam City and Oklahoma City schools, Levi worked at the K20 Center for Education and Community Renewal as a Mathematics Specialist. Most recently, he worked at the Oklahoma State Department of Education for more than eight years as the Director of Computer Science and Secondary Mathematics and Assistant Deputy Superintendent of Curriculum and Instruction. He began his role as the Executive Director of the Tulsa Regional STEM Alliance in 2021. Levi holds his Bachelor's Degree in Mathematics Education from Oklahoma State University and his Master's Degree in Instructional and Academic Leadership from the University of Oklahoma.



During his career, Levi has made authentic, ambitious instruction his goal as he has provided countless hours of professional development, designed state policies, managed federal grants, and helped to direct millions of dollars aimed at elevating excellent STEM teaching. Levi has designed and implemented innovative structures that reimagine accountability as a method for envisioning, supporting, and celebrating schools. As a result, Oklahoma has gained national attention for the [Champions of Excellence](#) initiative including two research studies focusing on the role Networked Improvement Communities play in creating collective efficacy and affecting instruction, social-emotional, and achievement outcomes. The widely-regarded [framework for evaluating STEM integration](#), co-developed with Tiffany Neill, has become an essential tool for STEM leaders across the country. While serving on the Association of State Supervisors

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of Mathematics as the Vice-President of Program, Levi co-authored the National Council of Teachers of Mathematics position paper on STEM Education, “[Building STEM Education on a Sound Mathematical Foundation](#),” co-developed the [Every Student Succeeds Act Toolkit](#) that provided guidance for reviewing and improving state plans for federally funded initiatives, and received the 2019 State Leadership Service Award in Mathematics from the Association of State Supervisors of Mathematics and Texas Instruments. Levi completed a fellowship with [Results for America](#) in 2020 and continues to prioritize evidence-based investments in STEM Education that can ensure all students are STEM-ready and lead choice-filled lives.

When Levi isn’t dreaming about STEM Education, you can find him and his daughter Ruby hiking, picnicking, cooking, gardening, cycling, birding, or watching Frozen for the umpteen-millionth time.

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Kristi Pempin, CPSM, is the Vice President of Marketing, Client Development, and Public Involvement for White Hawk Engineering & Design, LLC (White Hawk). Focused on Oklahoma and Texas, White Hawk is a women-owned small business that provides engineering, engagement, environmental, and land surveying services. Kristi served White Hawk as a consultant for nine years before joining the firm in June 2021. As a University of Central Oklahoma graduate, Kristi has devoted her career to promoting engineers like rock stars. Passionate about the future engineering workforce in Oklahoma, Kristi serves as a board member of The Steam Engine, a non-profit organization in Oklahoma City offering interdisciplinary education enrichment programs in science, technology, engineering, arts, and mathematics for youth.

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Frank Relja, P.E. joined TAIT as Airports Facilities Engineer in July, 1995, became Senior Engineer in July, 2000, moved into the Facilities Section Chief position in August, 2004, and was appointed to his current position of Director, Engineering and Planning in July, 2016. Prior employment included project Manager for the consulting firm HNTB, (1987-1995). Design Engineer and Estimator for JEM Engineering (1985-1987) and inspector for the Missouri Department of Transportation, (1983-1985). He attended the University of Missouri-Rolla (Missouri S&T) and earned a Bachelor of Science Degree in Civil Engineering. Mr. Relja is a Professional Engineer in the State of Oklahoma and a member of the Order of the Engineer.

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Vaughn Rupnow, P.E. is a Design Engineer for Ground Improvement Engineering, a licensed design associate of Geopier. Vaughn holds a BS in Civil Engineering from Iowa State University and has 20 years of geotechnical engineering experience. He lives in Tulsa with his wife and son and enjoys spending time with family and outdoor activities such as cycling, running, and hiking. His hobbies also include college sports, cooking, and home brewing.



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Henry Som de Cerff, P.E. is the Design Engineering Manager of the City of Tulsa Engineering Services Department. He is a registered Professional Engineer in the State of Oklahoma.

His current duties include the oversight of project design for the City of Tulsa capital improvements program. Mr. Som de Cerff oversees the capital program of civil / municipal projects funded by general obligation bond issues, sales tax, water and wastewater revenue bonds, enterprise funds, general fund, Federal Highway & State Transportation funds.

Mr. Som de Cerff has worked for the City of Tulsa since 1991. He has served in Development Services, Public Works Real Estate, Engineering Services as staff engineer and the Lead Engineer in Transportation Design and now serves in his current capacity as Design Engineering Manager. Mr. Som de Cerff is a graduate of Oklahoma State University.

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Jared Schwennesen, P.E. is the head of the Multi-Modal Division at the Oklahoma Department of Transportation. In 2009, Schwennesen began his tenure with ODOT as an Engineer in Training. Since then, he held roles in Bridge; Traffic; Maintenance in ITS and Fiber Optics; Environmental Programs and Rail.



Schwennesen earned his Bachelors of Science and Masters of Science in Civil Engineering from the University of Oklahoma. Additionally, he gained his professional engineering license in 2012. Having worked as a manager and designer in a diverse group of ODOT divisions, Schwennesen is prepared to lead Multi-Modal as it seeks to improve Oklahoma's alternative forms of transportation.

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Britt E. Smith, P.E., F.NSPE, received a Bachelor of Science degree in engineering from the Missouri University of Science and Technology. He began his career with MECO Engineering as a civil engineer and project manager. Later, he continued his work as a staff engineer for the City of Jefferson and then the Missouri Department of Conservation. Currently, Britt is the operations divisions director for the Department of Public Works in Jefferson City where he oversees the operations of the streets, parking, central maintenance, and airport divisions.



Prior to beginning his career as an engineer, he was commissioned as an officer in the Missouri Army National Guard in the aviation branch. He received training as a helicopter pilot at Fort Rucker, Alabama where he completed the training as an honor graduate. He was a member of the Missouri Army National Guard for eight years.

Britt is an active member of both the National and Missouri Society of Professional Engineers (NSPE/MSPE). He has held various positions with the state society including that of state president. On the national level, he was named a Fellow in NSPE in 2016, he is a past member of the NSPE House of Delegates. Britt is the currently the president of the NSPE Board of Directors.

Britt is also a member of the American Public Works Association (APWA). He has served on various committees in APWA.

His family includes his wife, Candy, three adult children: Glenn, Hannah, and Grace, a border collie named Roxie, and various foster dogs.

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BRIAN TAYLOR, P.E. was named Chief Engineer of ODOT in March 2019. Taylor



oversees all statewide engineering and operations activities. Taylor has 28 years of experience at ODOT and began his career in Southeastern Oklahoma's Division Two Antlers Residency in 1990. He moved up to Associate Engineer before becoming Division Two Traffic Engineer in 1996. From 2008 to 2013, Taylor served as Division Maintenance Engineer, which included oversight of nine southeastern Oklahoma counties. From 2013 to 2019, Taylor served as the Division Four Engineer. As the Division Engineer in the central region, he oversaw construction and maintenance of Logan, Payne, Kingfisher, Oklahoma, Canadian, Garfield, Noble, Grant and Kay counties which also includes the Oklahoma City metro. Taylor supervised the I-235/Off-Broadway project during this period along with several other accomplished projects.

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Andy Vanaman, President of Premier Steel Services LLC, received a Bachelor's in Science with a background in math and architectural drafting and design while attending Phillips University on a baseball scholarship in 1988.

With this background and his lessons learned in teamwork, he had the opportunity to take over the assets of a failed fabricator in 2004, Premier Steel was born.

Since that time, Premier has amassed a portfolio of over four hundred projects ranging from gaming, hospitality, education, and healthcare across the United States. Premier has also differentiated itself as the leader in composite fabrication in multi-story facilities across the country. Under this leadership, Premier Steel Services has fabricated more than 2 million square feet of composite structures. In the spring of 2019, Premier Steel took the Fast Cast Stair System wall design and developed the Fast Cast Bridge®.

“Premier Steel Services strives for continual development while exceeding our customers’ and employees’ expectations.”