

2024 Forensics Engineering Conference: Bios and Abstracts



Juan Carlos Araiza, Ph.D., PE, M.ASCE
Senior Vice President
EFI Global, Inc.

BIO

Dr. Juan Carlos Araiza has over twenty years of design, construction, research, and technical leadership experience related to the evaluation of existing structures, forensic engineering, and expert witness services. Araiza has extensive experience with structural dynamics and advanced finite element modeling applied to failure analysis. He has led the forensic investigation of some of the most significant structural collapses in the US for the last few years, including the 2018 collapse of the FIU Bridge in Miami and the 2019 collapse of the Hard Rock Hotel in New Orleans. Araiza holds a Ph.D. in structural engineering from Universitat Politècnica de Catalunya. He is an active member of the ASCE Forensic Engineering Division and ACI Committee 444 on Structural Health

Monitoring.

The Crucial Role of Forensic Engineering in Subrogation Litigation

ABSTRACT

In the complex landscape of subrogation litigation, where insurance companies seek recovery after indemnifying their insured parties, the role of forensic engineering emerges as a pivotal factor. This conference session aims to delve into the multifaceted significance of forensic engineering in subrogation cases, exploring how it contributes to the thorough investigation, evidence gathering, and successful resolution of disputes.

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During this session, attendees will gain insights into real-world case studies where forensic engineering played a critical role in clarifying liability and aiding the subrogation process. Speakers will share best practices in collaborating with forensic experts, legal teams, and insurance professionals to navigate the intricacies of subrogation cases successfully.

Sampling For Investigations of Constructed Facilities

ABSTRACT

Investigation of Constructed Facilities: Sampling Methodologies is a peer-reviewed guide, published by ASCE in 2021, on the topic of sampling for construction defect investigations. The field sampling of as-built conditions often becomes a basis on which forensic engineers draw conclusions about the cause(s), prevalence, and severity of defects throughout a facility. A rational and systematic approach to sampling can be a powerful tool for a forensic engineer's credibility and method of proof. This presentation will review the content of the recently published book, which was sponsored by ASCE's Forensic Engineering Division. The authors will discuss several important sampling considerations for field investigations. Pertinent sampling methods for construction defect investigations will be examined and the applicability of both random and directed (nonrandom) sampling approaches will be reviewed. The presentation will include the following topics: legal background and US Rule of Evidence 702; random sampling; nonrandom sampling; methodology considerations; and examples and case studies.

2024 Forensics Engineering Conference: Bios and Abstracts



Norbert “Norb” J. Delatte, Jr., Ph.D., PE
Head, School of Civil and Environmental Engineering
Oklahoma State University

BIO

Dr. Norbert J. Delatte, Jr., P.E., is the M.R. Lohmann Endowed Professor of Engineering and the Head of the School of Civil and Environmental Engineering at Oklahoma State University.

Formerly, he was the Professor and Chair of the Department of Civil and Environmental Engineering at Cleveland State University. He also served on the faculty of the University of Alabama at Birmingham and the United States Military Academy, West Point, New York. He received his B.S. in Civil Engineering from The Citadel in 1984, a Master's Degree in Civil Engineering from The Massachusetts Institute of Technology in 1986, and

a Ph.D. in Civil Engineering from The University of Texas at Austin in 1996.

Delatte is a registered professional engineer in the States of Oklahoma, Ohio, and Alabama, and in the Commonwealth of Virginia. He served for eleven years in the United States Army as an officer in the Corps of Engineers, including two years of service in the Republic of Korea, wartime service in the Arabian Peninsula during Operation Desert Storm, and command of an engineer company during Hurricane Andrew relief operations in southern Florida. He taught as an Assistant Professor at the United States Military Academy at West Point, New York during the 1996-1997 academic year.

CROSS-US – Opportunities to Warn

ABSTRACT

Collaborative Reporting for Safer Structures US (CROSS-US) involves overseas partners from CROSS-UK, the ASCE SEI, and the ASCE FED. We help professionals to make structures safer. We do this by publishing safety information based on the reports we receive and information in the public domain. We are a trusted provider of free safety information for the built environment.

The system is built on anonymous reports and expert review. We have strict processes that ensure both the confidentiality of our safety reporting system and the quality of the information we provide.

This session will include recent case studies from CROSS-US reports and FED publications. The core of this session will include speakers presenting on cases and then engaging the audience in ideas that are important lessons learned for structural engineering profession. The audience input will be shared with the CROSS-US technical experts in creating final reports to be published in future edition of CROSS-US newsletter on www.cross-us.org.

Among other topics this session will cover:

- Information to prevent future near miss and/or failures from each case study.
- Importance of sharing failure and/or near miss information with your peers.
- Awareness of the CROSS-US program and information on website to use in professional practice.
- Awareness of the CROSS international program and its resources

2024 Forensics Engineering Conference: Bios and Abstracts



Michael J. Drerup, PE, F.ASCE
Principal Engineer
Drerup Building Performance Engineering, PLLC

BIO

Over the past 27 years, Mike Drerup has investigated performance concerns at hundreds of buildings and structures. His work has ranged from single family homes to large building collapses. He has evaluated damage attributable to earthquakes, blast, impact, fire, water intrusion, corrosion, construction defects, and other factors. Drerup has previously worked for two prominent forensic engineering firms and an international structural design firm. In 2014, he established Drerup Building Performance Engineering, PLLC with his partner Alicia Díaz de León, PE, SE, AIA, and continues to collaborate with other consultants and laboratories nationwide to investigate a broad range of issues pertaining to structure, enclosure, and construction materials.

Drerup serves as a voting member of ASCE's Board Committee on Technical Advancement, as Chair of ASCE's Joint Task Committee with CROSS-US, and is past Chair and a 21-year member of ASCE's Forensic Engineering Division.

[Drerup Intro Video \(Click link to watch\)](#)

Just Add Water: A Concept & Case Study Exploration of Water in the Built Environment

ABSTRACT

A concepts & case studies exploration of water in the built environment, from devastating floods to the molecular hydration chemistry of delayed ettringite formation, touching on building envelope waterproofing and condensation along the way.

- Building enclosure - intrusion and condensation
- Hydrophobic and Hydrophilic materials
- Goldilocks (too much, too little, just right)
- Wind v. Water (credit to D. Peraza)
- Ettringite - retaining wall case study

Duty to Warn

ABSTRACT

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Jeremiah Fasl, Ph.D., PE, SE
Associate Principal
Wiss, Janney, Elstner Associates, Inc.

BIO

Dr. Jeremiah Fasl is an Associate Principal in the Austin office of Wiss, Janney, Elstner Associates, Inc. His interests include structural reliability, structural stability, structural health monitoring, and rehabilitation. Fasl specializes in concrete and steel civil structures, such as port structures, bridges, environmental structures, and power plants. He is involved in multiple ACI committees. During his time at the University of Texas, he worked on a variety of bridge instrumentation and material testing projects. His research focused on estimating the remaining fatigue life in steel connections using field measurements, where he developed instrumentation and analyzed data for bridges and high mast illumination poles.

Evaluation of a Reinforced Concrete Cooling Tower

ABSTRACT

Differential settlement was observed in bypass piping adjacent to a 500-foot tall, counterflow natural draft hyperbolic concrete shell structure. The tower features conventionally reinforced concrete for the various elements (shell, diagonal columns, pedestals, and ring beam). The tower is supported by a continuous ring beam foundation that bears on select fill. An elevation survey of the column pedestals identified as much as 7 inches of relative settlement from when the column pedestals were previously surveyed, and a recent outage identified voids in the underlying soil where differential settlement was observed. A structural evaluation of the cooling tower was performed to determine the impact of the induced settlement and confirm the structural adequacy.

2024 Forensics Engineering Conference: Bios and Abstracts



David H. Fisk
Partner
Grotefeld Hoffman

BIO

David Fisk is a partner in Grotefeld Hoffmann's Dallas office. He concentrates his practice on large-loss property subrogation and construction matters, primarily representing businesses, homeowners, and builder's risk, property, and liability insurers pursuing property damage claims against tortfeasors and other wrongdoers. The property damage claims he pursues for his subrogation clients involve catastrophic losses resulting from construction and design defects, fires, explosions, machinery and equipment failures, and gas and water leaks, as well as transit losses. Fisk also counsels developers, owners, and general contractors in construction disputes and on contract issues.

Fisk's legal experience began at an early age, working at his father's construction law and litigation firm in high school, and then working for a construction, environmental, and utility law firm while studying economics and computer science at the University of Texas at Austin. While in law school at St. Mary's University in San Antonio, he clerked in the legal department at Zachry Construction Corporation and was introduced to the field of subrogation during a summer clerkship at a firm in Dallas.

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Jason Gregorie, PE, CFM, REWC, RRC
Civil/Structural Engineer
Applied Building Sciences, Inc.

BIO

Jason Gregorie is a professional engineer and principal with Applied Building Sciences (ABS) in Charleston, South Carolina. He has a BS and MS in Civil Engineering from Clemson University. His practice focuses on forensic investigations, civil engineering, structural engineering, and building enclosure consulting.

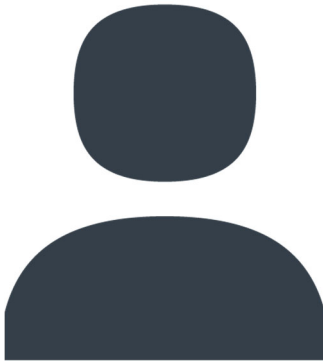
Gregorie presently serves as Immediate Past-Chair of the Forensic Engineering Division of ASCE. He is also a member and Past-Chair of ASCE's Committee on Forensic Investigations. He has been qualified as an expert witness in civil and structural engineering in state and federal court.

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Derrick S. Hancock, PE
Senior Structural Engineer
NV5

BIO

Derrick Hancock has been involved in all phases of structural design of a variety of structures and performs numerous forensic investigations in the Houston area and nationally. These investigations include failures due to earthquakes, hurricanes, tornados, floods, foundation failures, collapse and structural deficiencies, vibration, seismic surveys, blast/explosion damage, water intrusion and exterior cladding failures and verification of construction compliance with applicable building codes and contract specifications. He has also served as a project structural engineer and manager, responsible for the design and preparation of construction documents for projects of all sizes; provided client coordination, prepared preliminary designs, interpreted code

requirements, prepared final calculations, supervised the preparation of final construction documents, assisted clients in obtaining city approval, permits and variances, and conducted field inspections of reinforced concrete, masonry, steel, and wood frame structures for conformance with project documents. Hancock has conducted extensive field investigations, designed repairs and seismic upgrading for rehabilitation and renovation projects, and worked on special projects that require unusual designs and research.

Duty to Warn

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As technology and industry standards continue to evolve, so does the complexity of failures, collapses, and incidents that lead to insurance claims. The topic of the Panel Discussion is "The Duty to Warn." Five ASCE Forensic Practice Committee Member panelists with forensic engineering and expert witness experience will engage in a discussion concerning the topic, our perceptions of how it is understood by engineers and by the general public, and how it relates to the professional responsibilities of engineers. Our discussion will include several specific scenarios intended to elicit participation from the audience and provide guidance regarding what a reasonable engineers responsibility is regarding the Duty to Warn. The discussion will include example state laws regarding the subject and their applicability. We intend to have ample time to answer questions and respond to comments from attendees.

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Ryan Kalina, Ph.D., PE
Vice President
Forensix Consulting
Lecturer
Cockrell School of Engineering

BIO

Dr. Ryan Kalina has been involved in the evaluation and analysis of a wide variety of defects and failures at thousands of buildings and other structures, such as design and construction defects; material defects; damage related to hurricanes, tornadoes, wind, and hail; structural failures related to collapse, impact, and fire; and damage to flooring systems due to improper installation. Kalina has provided repair recommendations and designs for structural systems and building envelopes as a result of defects and failures.

Kalina's interests include the evaluation of material defects, particularly as they relate to concrete durability, such as alkali-silica reaction, sulfate attack, delayed ettringite formation, and improper concrete mixture design. Other interests related to material defects include the corrosion of metals and coatings. He also has an interest in the evaluation and analysis of structural failures due to instability and collapse. Kalina's doctorate research in the Department of Civil, Architectural, and Environmental Engineering (CAEE) at the University of Texas at Austin was in concrete materials and structural engineering. His research is focused on deficiencies in the current ASTM standard for characterization of supplementary cementitious materials for use in concrete and the behavior and comparison of high alkali fly ash and natural pozzolans in test methods for alkali-silica reaction. Kalina obtained his M.S. in structural engineering, also from the Department of CAEE at the University of Texas at Austin, with a focus in research on the corrosion resistance of pre-stressing strands for use in the post-tensioning of bridges.

Prior to becoming an engineer, Kalina worked in the construction industry and is experienced in the placement of concrete, erection of steel and wood framing systems, roof installation, and interior finish-out.

The Practice of Forensic Engineering in Academia

Abstract information available soon.

2024 Forensics Engineering Conference: Bios and Abstracts



Joshua B. Kardon, Ph.D., SE, F.ASCE
Founder
Joshua B. Kardon + Company Structural Engineers

BIO

Dr. Joshua Kardon provides structural engineering consultation, design, and construction review services to Building owners, architects, and to other private, public, and commercial clients for timber, concrete, steel, and masonry structures. Projects include new single- and multi-family residences, commercial developments, vehicular and pedestrian bridges, schools, hospitals, retaining structures, foundations, remedial construction, structural renovations, remodels and additions, and seismic upgrading of existing buildings.

Kardon's studies and doctoral dissertation have established his reputation as a leader in the field of understanding the standard of care of structural engineering. He has been a guest lecturer at UC Berkeley, Stanford University, Western Construction Consultants (Westcon), The American Society of Home Inspectors, the Splinter Group, and the AIA. Kardon is asked to present professional papers throughout the United States and internationally including Delft University of Technology in the Netherlands, ICE Conference in London, and IABSE Conferences in Venice, Geneva, Madrid, Guimaraes (Portugal), and New York. He serves as a consultant or expert witness to help settle disputes where construction defects or an engineer's negligence is alleged.

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2024 Forensics Engineering Conference: Bios and Abstracts



Zachary D. Kates, PE, LEED AP
Senior Principal and Texas Forensics Practice Leader
Thornton Tomasetti

BIO

Zachary Kates joined Thornton Tomasetti in 1998 and, for approximately 18 years, specialized in the management, structural analysis and design of complex building structures, including new design of large scale commercial and healthcare projects, and the renovation of existing and historic structures. Since 2010, he has focused on growing Thornton Tomasetti's Forensic Engineering practice.

Currently, Kates leads the Forensic practice in Texas. He has performed numerous forensic engineering investigations, including damage assessment of existing facilities, cause and origin analysis of building and bridge failures, evaluation of construction defects, and building envelope assessment. He has been involved in emergency response for several building and bridge collapses, including stabilization and deconstruction, and has performed remedial design for failed structures.

Predicting the Future: How Fitness for Service Evaluation was Used to Determine the Fate of Damaged Industrial Equipment

ABSTRACT

In this presentation, Zachary Kates will be presenting how a fitness for service evaluation of a damaged industrial structure was used to determine if the equipment required demolition and replacement or, with repair, could stay in service and meet the service life requirements of the original design. We will discuss the forensic investigation that was performed on the structure including thermography, the global analysis that was performed to determine the overall behavior of the system, and the local member analyses that were performed using the information from the global model.

2024 Forensics Engineering Conference: Bios and Abstracts



Joseph Klein, PE
Senior Engineer
Pivot Engineers

BIO

Joseph Klein is a Senior Engineer with Pivot Engineers in Austin, TX, and his professional experience is focused on the evaluation and repair of structures. He is an active member of the American Concrete Institute, including memberships on ACI Committees 132, Responsibility in Concrete Construction; 348, Structural Reliability and Safety; 437, Strength Evaluation of Existing Concrete Structures; and 444, Structural Health Monitoring. He received his BS and MS in civil engineering from The University of Texas at Austin in 2013 and 2015, respectively.

3 Garages, 3 Repairs – How Stakeholders Influence Repair Design

ABSTRACT

Repair design is not only about addressing the needs of the structure, but also about addressing the needs and expectations of the stakeholders. Repair engineers often must tailor their repair approach based on requirements from the Owner, the Building Code Official, and others. Parking garages, in particular, are often subject to these requirements due to their public visibility, their effect on site operations, and their tendency to be inadequately maintained. This presentation examines three different parking garage repair projects with varying levels of stakeholder involvement and discusses the resulting differences in the repair approach for each.

2024 Forensics Engineering Conference: Bios and Abstracts



Norma Jean Mattei, Ph.D., PE, F.SEI, F.ASCE
Professor Emeritus
The University of New Orleans

BIO

Dr. Norma Jean Mattei earned her Ph.D. degree in Civil Engineering from Tulane University and has been a renowned researcher and educator in the areas of structures and construction materials. She is also an expert in sustainable engineering and construction and large watershed management initiatives. Mattei serves as one of two civilian civil engineer Commissioners on the Mississippi River Commission (MRC). She recently completed her year as 2017 President of the American Society of Civil Engineers (ASCE) and locally she is still active on the Executive Committee of the ASCE New Orleans' Chapter of the Structural Engineering Institute. Norma Jean also has served in the past on several National Council of Examiners for Engineering and Surveying

(NCEES) committees and task forces, most recently serving as chair of the Board-level NCEES Education Committee and is an Emeritus Member of NCEES. She was named by the Governor of Louisiana to Louisiana's licensing board for professional engineers, LAPELS, serving as Chairman of the LAPELS Board in 2011-12. Mattei is a registered Professional Engineer in the state of Louisiana.

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Leonard J. Morse-Fortier, Ph.D., PE, M.ASCE
Technical Director
Simpson Gumpertz & Heger

BIO

Leonard J. Morse-Fortier received his B.S. in Civil Engineering from the University of Massachusetts, and both his MSCE and Ph.D. in Engineering Mechanics from Princeton University. After working several years in wind engineering, he completed his Ph.D., and spent ten years teaching structural mechanics and building technology to architecture students, first at the University of Notre Dame, and later at MIT. In 1996, he joined Simpson Gumpertz & Heger, where he currently holds the title of Technical Director. His practice has evolved to emphasize forensics, with nearly 30 years of experience investigating and working to solve problems. An active member of ASCE's Forensic Engineering Division, he served as Executive Committee Chair in 2008-2009, he has co-

authored the Guidelines on Forensic Engineering Practice, and he was honored with the 2017 ASCE Forensic Engineering Award. He recently returned to the University of Massachusetts to teach in their graduate program in architecture.

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David Peraza, PE
Principal Engineer
Exponent

BIO

David Peraza has over 40 years of broad structural and civil engineering experience and is licensed in 17 states. His work has included investigations of major collapses, catastrophe response, diagnosis of design and construction deficiencies, damage caused by adjacent construction, condition assessments, hurricane damage investigations, design of remedial and stabilization measures for distressed buildings, design for renovation projects, and the analysis of unusual structures. His projects have included high-rise buildings, façades, cranes, parking structures, pre-engineered buildings, industrial facilities, scaffolds, formwork, bridges, and waterfront structures.

Following the 9/11 terrorist attacks on the World Trade Center, Peraza led the emergency engineering response for the City of New York, which continued around the clock for nearly nine months and included the coordination of 39 engineering sub-consultant firms. He has led several high-profile structural collapse investigations including L'Ambiance Plaza, the Four Times Square Hoist Collapse, and the Miller Park crane accident.

Hurricane Harvey Flood Damage to Corporate Campus

ABSTRACT

Hurricane Harvey made landfall in Texas as a Category 4 storm on August 25, 2017, depositing record damage to a large corporate campus. This presentation will describe the process and results of an engineering investigation into how floodwater entered each building, how it flowed through the interconnected basements, the timing of the floodwater entry, and the analysis needed to distinguish between the sources of the water. It will also show the value of social media in engineering investigations, the high cost of unclear engineering graphics, and the need to question the reliability of hydrological data published by the federal government.

2024 Forensics Engineering Conference: Bios and Abstracts

Lloyd M. Sonenthal, PE, Esq., M.ASCE



BIO

Lloyd Sonenthal earned a degree in Engineering Mechanics from the University of Illinois and is a graduate of DePaul University Law School in Chicago with a Juris Doctor. He is a registered professional engineer in Illinois, admitted to the Bar of the State of Illinois, the Federal District Court for the Northern District of Illinois and the 7th Circuit Court of Appeals, since 1970. Sonenthal was formerly Senior Mechanical Engineering Supervisor for Inland Testing Laboratories of General Environments Corporation providing first article performance evaluation and environmental testing for the private sector, NASA, NHTSA, and various departments or agencies within the Department of Defense. He then served as Division Director of the Safety Services Division of General Environments Corporation providing forensic engineering evaluation and expert testimony for the plaintiff and defense bar. He is currently a solo practitioner consultant in forensic engineering and an attorney at law in general practice in Chicago. He is a member of the National and Illinois Society of Professional Engineers, and the American Society of Civil Engineers

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Mohamed M. Talaat, Ph.D., PE, SE
Senior Project Manager
Simpson Gumpertz & Heger

BIO

Dr. Mohamed Talaat is a senior project manager with Simpson Gumpertz & Heger (SGH) in the San Francisco Bay Area. His primary practice is in risk and safety assessment of nuclear, defense, and critical infrastructure. He performs advanced finite element simulations, performance-based earthquake engineering, reliability analysis, failure investigation, and qualification and retrofit of structures, connections, and equipment. He has managed, executed, or peer-reviewed the fragility scope of seismic and wind probabilistic risk assessments for several commercial nuclear power plants and DOE facilities. Talaat supported several high-profile design and investigation projects, including San Francisco's iconic Sutro Tower, Golden Gate Bridge, War Memorial

Building, and the Minnesota I-35W bridge collapse. He is a frequent contributor to developing codes, standards, and guideline documents for the ASCE, ACI, IAEA, US National Labs, FEMA, and the Electric Power Research Institute, and developed the numerical tools for progressive collapse simulation by direct element removal in OpenSEES.

The Minnesota I-35 Bridge Collapse

ABSTRACT

The 8-lane, half-mile long bridge that carried an average 140,000 vehicles daily on Interstate I-35W across the St. Anthony Falls in Minneapolis, MN, collapsed at 6:05 pm on August 1st, 2007. The rush-hour collapse plunged more than 100 vehicles into the Mississippi river, killing 13 people and injuring nearly 150. The subsequent NTSB investigation cited undersized gusset plates as the primary reason for the collapse. This prevailing theory of collapse, while plausible, did not adequately explain the asymmetric collapse pattern. We investigated the bridge collapse for other credible causes, and identified what we believe is the most likely scenario. Findings collected from field investigations, review of periodic maintenance reports, finite element analyses, and conclusions by another forensics expert later discovered in the course of legal settlement strongly support our conclusion.

2024 Forensics Engineering Conference: Bios and Abstracts



Christopher Trask, PE
Technical Director
Nelson Forensics

BIO

Christopher Trask is a Technical Director with Nelson Forensics, LLC, a multi-disciplined forensic engineering, and architecture firm that specializes in assessing the cause and extent of damage and defects to many types of structural systems. He received a Bachelor of Science in Civil Engineering from the University of Maryland, College Park, and a Master of Engineering in Civil Engineering from Stevens Institute of Technology.

Trask has over two decades of industry experience in both engineering and construction. He has provided inspection and design services at some of the nation's most iconic bridges, was design project manager for work on one of North America's tallest buildings

and was a design manager for one of the largest single design-build contracts for a transportation project in the United States.

He currently leverages his mixed experience in both design and construction, providing investigative, diagnostic, code compliance, and forensic design services on a wide range of perils and failures in multiple states.

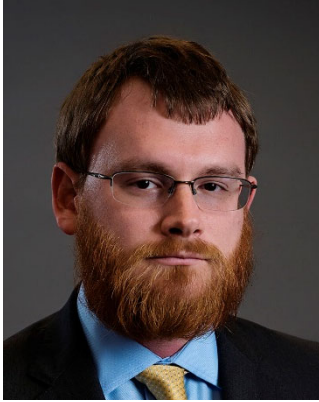
Forensic Engineering in the Northeast

ABSTRACT

Forensic investigation subject matter is vast, and often contains regional-specific nuances. Having worked in multiple regions throughout the country, Christopher Trask will be presenting on forensic engineering in his home region, the Northeast United States.

The presentation will showcase several northeast forensic investigation case studies, and include discussion of topics germane to northeast structures, such as basements, adjacent construction, archaic building components, and falling debris.

2024 Forensics Engineering Conference: Bios and Abstracts



Travis D. Wells, PE, Esq., CFEI
Regional Engineering Manager, Forensic Engineer
Haag Engineering

BIO

Travis D. Wells, PE, Esq., CFE., is a Regional Engineering Manager and Forensic Engineer with Haag Engineering Co. Wells' areas of consulting include mechanical failure analysis, fires and explosions, and accident analysis. He holds Doctor of Jurisprudence, Master of Engineering, and a Bachelor of Science (Mechanical Engineering) degrees from Texas Tech University where he worked at Texas Tech's Materials Performance and Failure Analysis Lab. His prior teaching experience includes developing and lecturing a unique course at Texas Tech University entitled "Introduction to Legal Aspects of Forensic Science and Engineering." Wells is a licensed mechanical engineer in 23 states, a licensed attorney in the State of Texas, and a NAFI Certified Fire

and Explosion Investigator with 16 years of experience in forensic engineering.

A Legal Perspective for Forensic Engineers: Case Studies in Contracts and Negligence

ABSTRACT

Understanding the role of an expert witness in legal proceedings will assist forensic engineers in establishing and maintaining successful careers. In this presentation, we will discuss the roles of the expert witnesses in a lawsuit, including how forensic engineers can be used to establish or refute various aspects of legal causes. We will discuss the roles of an expert witness through mechanical engineering case studies, including an introduction to the elements of legal causes of action, topics on evidence, and how lawyers may utilize forensic engineers while presenting their cases.

2024 Forensics Engineering Conference: Bios and Abstracts



Jim D. Wiethorn, Ph.D., PE
Founder & Chairman
International Crane & Construction
Safety Solutions, LLC

BIO

Jim Wiethorn is the founder and chairman of International Crane & Construction Safety Solutions, LLC. He was formerly the principal engineer and chairman of Haag Engineering Co. Throughout his career, Wiethorn has been involved damage and failure analysis in the design, construction, and evaluation of residential, commercial, and industrial buildings, especially involving crane accidents.

Wiethorn has been involved in over 350 cases involving crane failures. Some of the most publicized cases include the Miller Baseball Park roof/crane collapse in Milwaukee; the Jack Breslin Center roof/crane collapse in East Lansing; the Maumee River Bridge launching girder collapse in Toledo; and the Hoover Dam Bypass Bridge cableway collapse.

Wiethorn graduated with a B.S. and M.S. in architectural engineering from University of Texas at Austin. He serves on the Engineering Advisory Board in the Cockrell School of Engineering and on the Board of Advocates in the College of Engineering and Computer Science at Baylor University.

ANO-Slight Change-Big Disaster: Arkansas Nuclear One

ABSTRACT

One of the key ramifications of a Critical Lift is the potential for loss of specialized equipment that could significantly delay completion of project due to long-term replacement of the equipment. Critical lifts require precise planning and training that are reviewed and endorsed by all participants. Chemical plants, refineries and nuclear facilities are particularly hazardous when heavy, specialized lifts are conducted. Changes in plans require an entire rework of all procedures. In 2013 during a maintenance replacement of a 550-Ton stator by specialized lifting equipment collapsed. Although the equipment had been used on an identical weight previously, slight changes in the plan ultimately resulted in the primary cause of the collapse.