

FORCON INTERNATIONAL

JOHN P. LEFFLER, PE

EDUCATION

Bachelor of Mechanical Engineering, Georgia Institute of Technology, 1993 - emphasis: mechanical design

- Pi Tau Sigma - Honorary Mechanical Engineering Fraternity

REGISTRATIONS & CERTIFICATIONS

Licensed Professional Engineer (Mechanical) in GA, FL, AL, NC, SC, PA, VA, MS, HI, TN, TX, AR, LA, MD, DC

Board Certified Diplomate in Forensic Engineering through NAFE, a CESB Member Board

Certified Automobile Technician - ASE

Powered Access Licensed-Registration: Operator, Mobile Vertical & Mobile Boom personnel lifts - IPAF / AWPT

FAA Part 107 Airman Certificate for commercial drone operation

PROFESSIONAL ASSOCIATIONS

American Society of Mechanical Engineers (ASME)

- Member, ANSI A112.19.1 Project Team on Enameled Cast Iron and Enameled Steel Plumbing Fixtures

American Society of Safety Professionals (ASSP)

- Member, ANSI A1264 Accredited Standards Committee on Slip and Trip Prevention
 - Vice-Chair, Subcommittee A1264.2
 - Led the revision of A1264.2-2012 into A1264.2-2022 *Reducing Slip Missteps on Walking-Working Surfaces*

ASTM International (formerly American Society for Testing and Materials)

- Vice-Chair, Technical Committee F13 - Pedestrian/Walkway Safety & Footwear
 - Chair, Subcommittee F13.10 - Traction
 - Primary author: ASTM F2948 - *Standard Guide to Walkway Auditor Qualifications* and ASTM F3539 - *Standard Practice for Creation of Walkway Tribometer Interlaboratory Study Reports and Test Procedures*
 - Received "Outstanding Leadership" award, June 2022
- Chair, Subcommittee F15.03 - Safety Standards for Bathtubs & Shower Structures
 - Co-Principal Investigator for federally-funded tribometry/barefoot human slip research project
- Former Chair, Technical Committee E58 - Forensic Engineering
 - Primary author: ASTM E2713 - *Standard Guide to Forensic Engineering*
- Participant in ASTM Committees D13, F24, and F25 regarding pedestrian friction standards topics

National Academy of Forensic Engineers (NAFE)

- Fellow
- Past President, Board of Directors
- Former Technical Editor-in-Chief (2014-2019) - *Journal of the NAFE*

National Fire Protection Association (NFPA)

- Member, NFPA 101 Life Safety Code Means of Egress Committee

UK Slip Resistance Group (UKSRG)

- Member

CAREER HISTORY - ENGINEERING

FORCON International, Atlanta GA (formerly) and Philadelphia PA: Forensic Mechanical Engineer (2/03-present). Conduct forensic engineering investigations and provide expert witness testimony related to:

- Pedestrian walkway safety: analyze slip resistance, fall hazards, other extrinsic factors, and codes/standards compliance. Researcher in pedestrian safety, bathing surface safety, and walkway tribometer reliability.
- Consumer products and mechanical equipment: analysis of design, manufacturing, installation, maintenance, usage, and codes/standards compliance issues. Specialties: machinery, power tools, furniture, powered lifts.
- Vehicle mechanical issues: analysis of brake, driveline, suspension, wheel/hub, steering, and other systems.
- Development, administration, and applicability of technical consensus standards.
- Workplace accidents: analysis of extrinsic factors & OSHA compliance.

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CAREER HISTORY - ENGINEERING - continued

Slip-Test Inc., Atlanta GA: Consultant (8/10-present). Responsible for engineering, R&D, manufacturing coordination, sales, and servicing of Brungraber-designed walkway friction testing devices (“tribometers”).

Precistems, Incorporated: Owner of product engineering consulting company (9/98-12/06). Lead designer of four Sears Craftsman power tools. Used 3D CAD modeling to design products housings, gears & internals. Ensured compliance with applicable standards. Conducted PDM implementations for several manufacturers.

Panasonic Wireless / MMCD: (5/98-9/98) Contracted to transition company from one 3D CAD system to another one, and to set up an engineering data management system. Configured new CAD workstations and related peripherals. Created all CAD and data management process infrastructure. Created user guides and trained users.

Motorola Energy Systems Group: (9/97-5/98) Designed AC power supply enclosures for cellphones. Designed an international AC adapter system used on several power supplies. Conducted extensive research into applicable safety standards (UL, ISO, IEC, BS, AS) for England, Germany, Australia, USA, and the European Union. Designed the power supply housings for the high-volume StarTAC and V-series cellphones.

Firearms Training Systems: (10/96-9/97, 4/93-4/94) Design of training weapon simulators. Responsible for production release of a military mortar simulator line, with over 80 manufactured components. Designed three firearm simulator conversions. Wrote the mechanical engineering sections of a proposal for an \$8M ship simulator.

Decibel Products, Inc.: (3/96-9/96) Responsible mechanical engineer for modular panel antenna production line, for cellular networks. Extensively involved with quality troubleshooting. Initiated many process improvements.

Herman Miller, Incorporated: (5/94-3/96) Design of custom office furniture system products. Developed a line of modular bank teller gates, with 20 unique versions. Participated in process improvement teams.

Woods Hole Oceanographic Institution: (6/91-9/91) Summer employment during college. Assisted with mechanical and CAD design of the Autonomous Benthic Explorer (ABE), a deep-sea research submarine.

CAREER HISTORY – AUTOMOTIVE

Ohio State University – College of Mechanical Engineering: created a complete & competitive design for the school’s Formula SAE racecar during sophomore year of college (1990), prior to transferring to Georgia Tech. Project leader for the construction of the racecar and its entry in the 1991 intercollegiate competition. Design tasks:

- Designed 95% of the car - selected all components, materials, and fabrication processes.
- Fabricated the frame and numerous other components of the racecar.
- Designed the highly adjustable suspension, which featured custom-cast aluminum suspension uprights.

Budweiser/Truesports Racing: Winning team of the 1986 Indy 500 and the 1986 -1987 Indy Car championships. Employed from 1986 -1989 as a mechanic, fabricator, and machinist.

- Extensive mechanical experience with maintenance, repair, and inspection of suspension, steering, braking, tire/wheel, chassis, clutch, transaxle, differential, cockpit, and engine subsystems.
- Fabrication of suspension parts, wings, and other components using shears, brakes, rollers, forms, presses, and other sheetmetal working tools on steels, aluminum, and titanium.
- Fabrication of wings and body panels using vacuum-bagged carbon/Kevlar composites.
- Extensive welding experience with TIG, MIG, and gas welding of steels and aluminum.
- Machining experience using lathes, mills, and grinders on steels, aluminum, and titanium.

Mechanic & fabricator for a racing school and four racecar preparation shops, 1982-1985. Worked on SCCA racecars in the Production, GT, Showroom Stock, Formula Ford, Formula Atlantic, Formula Super Vee, and Sports 2000 classes. Built racing ATVs and street rods. Restored and maintained several vintage racecars. Graduate of the Jim Russell School Of Motor Racing at Laguna Seca Raceway, Salinas, CA, 1983.

CAREER HISTORY - ACADEMIA

Georgia Institute of Technology, School of Industrial Design, College of Design: (8/04-12/19) Lecturer. Instructor for junior/senior and masters level 3-credit hour course entitled "Materials & Processes II".

CONTINUING EDUCATION

Engineering & Design

- Design for Manufacture and Assembly (DFMA) - University of Wisconsin
- Designing Plastic Parts for Assembly - University of Wisconsin
- Plastic Injection Molded Part Design & Molding Processes Workshops - GE Plastics
- Geometric Dimensioning and Tolerancing - Clemson University
- Advanced Plastic Gear Design - Universal Technical Systems
- The Bolted Joint - American Society of Mechanical Engineers
- Photogrammetry and Analysis of Digital Media - Society of Automotive Engineers (SAE)

Safety

- OSHA Occupational Safety & Health Standards for General Industry (30 hour) - Georgia Tech
- National Standardized Child Passenger Safety Training - NHTSA/Safe Kids USA
- Child Passenger Safety Technician Update Training - Georgia Traffic Injury Prevention Institute
- Certified XL Tribometrist training course - ESIS/International Safety Academy
- Understanding Slip & Fall Events: A Biomechanical Perspective - University of Southern California
- Participant, ASTM F13 Interlaboratory Study on slip resistance testing - University of Southern California
- Multifactorial Analysis of Slip and Fall Events: Implications for Forensic and Safety Professionals - ASTM
- Advanced Safety Management - Georgia Tech Professional Education
- OSHA Occupational Safety & Health Standards for Construction (30 hour) - ClickSafety

Vehicles

- Injuries, Anatomy, Biomechanics & Federal Regulation - SAE
- Occupant and Vehicle Kinematics in Rollovers - SAE
- Commercial Vehicle Braking Systems - SAE
- Forensic Analysis of Medical Records in Injury Biomechanics and Accident Reconstruction Studies - SAE
- Air Brake Training School - Bendix Commercial Vehicle Systems

Miscellaneous

- General Topics in Forensic Engineering - National Academy of Forensic Engineers
- Advanced Dynamics of Machinery (graduate level 3 credit hour course) - Georgia Tech
- Machine Tools (undergraduate level 2 credit hour course) - Columbus State Community College

PATENTS

"Combination Line Trimmer and Edger", US Patents 6,769,494 (August 3, 2004) & 7,131,499 (November 7, 2006)

SPEAKING ENGAGEMENTS

Topic: "***Extrinsic Analysis of Same Level Fall Incidents***" presented to:

- Acordia - Intercontinental Hotels Group - ESIS / Ace - Risk Enterprise Management, Ltd - Liberty Mutual - Gallagher Bassett - FCCI Insurance Group - Broadspire - Hertz - Southern States Insurance Exchange

Topic: "***Product Failures and Subrogation***" presented to:

- National Association of Subrogation Professionals - Jacksonville Claims Association - Crawford University - Risk Enterprise Management, Ltd - FCCI Insurance Group

Topic: "***Effective Use of Surrogates in Investigating Bodily Injury Claims***" presented to:

- Georgia Defense Lawyers Association - FCCI Insurance Group

SPEAKING ENGAGEMENTS – continued

Topic: ***“Forensic Analysis of Alleged Child Restraint Failures”*** presented to:

- Childrens Healthcare of Atlanta

Topic: ***“Slip Resistance Testing - Something to Consider”*** presented to:

- State Bar of Georgia, Advanced Slip & Fall Seminar

Topic: ***“Vehicle and Occupant Response in Evasive Maneuvers”*** presented as guest speaker to:

- Society of Automotive Engineers seminar *“Forensic Analysis of Medical Records in Injury Biomechanics and Accident Reconstruction Studies”*

Topic: ***“Walkway Traction Testing - Friction and Fiction”*** presented to:

- Institute of Continuing Legal Education: Premises Liability Seminar, State Bar of Georgia

Topic: ***“Subrogation: Who Else Should Be At The Table?”*** panel discussion, presented to:

- FCCI Insurance Group

Topic: ***“Subrogating the Slip and Fall Claim”*** presented to:

- National Association of Subrogation Professionals, via webinar and at 2012 national conference

Topic: ***“The Changing World of Slip-and-Fall Defense”*** presented to:

- Georgia Defense Lawyers Association

Topic: ***“Pedestrian Slips - Proactive & Reactive Things to Consider”, “Pedestrian Fall Intrinsic Analysis”, “Pedestrian Safety - Specific Exposures”*** presented to:

- Wells Fargo Insurance Services

Topic: ***“Use and Misuse of Codes, Standards, and Regulations”*** presented to:

- National Academy of Forensic Engineers - Special Seminar

Topic: ***“Forensic Engineering Lessons: Plan versus Reality”*** panelist in ***“Successful Product Design and Execution: Innovative New Product Development”*** panel discussion, presented to:

- International Consumer Product Health & Safety Organization, Product Safety Training Workshop, June 2016

Created and co-presented 8-hour class entitled: ***“Walkway Auditor Training Course: ASTM F2948”***, Houston TX, January 2014 - Anaheim CA, June 2015 - Greenville NC, November 2016

Topic: ***“Friction or Fiction: The Changing World of Slip-and-Fall Analysis”*** presented to:

- Defense Research Institute, via webinar – June 2019
- Numerous law firms and insurance companies, live and via webinar

Topic: ***“Prevent Slips, Trips and Falls With ANSI/ASSP A1264 Walking/Working Surface Standards”***

co-presented (with Liberty Mutual Insurance Company) to:

- American Society of Safety Professionals, on-demand webinar – recorded December 2019

Topic: ***“Hot Wheels: Tips and Strategies for Successfully Subrogating Vehicle Product Liability claims”***

co-presented (along with two attorneys) to:

- National Association of Subrogation Professionals, via webinar – July 2020

Topic: ***“Product Failures: Potential Layers of Liability”*** presented to:

- Numerous law firms and insurance companies, via webinar

SPEAKING ENGAGEMENTS – continued

Topic: **“A New Suite of Tribometer Standards”** in workshop **“Human slip-based tribometer standards: An update on progress in ASTM Committee F13”** presented virtually to:

- 21st Triennial Congress of the International Ergonomics Association, Vancouver, June 2021

Topics: **“The ‘Conditioning clip’ for Slider 55 preparation”** and **“The ‘Shim method’ for testing 3D-profiled bathing surfaces”**, presented virtually, to:

- Slip Resistance Flash Session, Qualicer 2022: World Congress on Ceramic Tile Quality, Castellon, Spain, June 2022

Topic: **“Pendulum friction testing of patterned 3D-profiled bathing surfaces: Challenges, tools, and techniques”** abstract, presented virtually along with James Flynn PE and Thurmon Lockhart PhD, to:

- International Conference on Slips, Trips and Falls, Sendai, Japan. International Ergonomics Association, July 2022

PUBLICATIONS

<https://orcid.org/0000-0001-6130-0785>

Leffler JP, Blanchette MG. Effects of Bathing Surface Drainage Contouring on Tribometer Friction Testing. *Journal of Testing and Evaluation*, Volume 50, Issue 3, February 2022: <https://doi.org/10.1520/JTE20210551>

Leffler JP. Competence and Complexity in the Changing World of Slip-and-Fall Analysis. *Georgia Defense Lawyer*, Fall 2021.

Leffler JP et al. Case Studies in Engineering Evidence (Chapter 1). In: McLay RW, Anderson RN, editors. *Engineering Standards for Forensic Applications*, 1st ed. San Diego (CA); Elsevier / Academic Press: 2019. p 14.

Leffler JP. Alleged Slips of Bathmats, Entrance Mats, and Walkway Mats in Premises Liability Cases. *Georgia Defense Lawyer*, Fall 2017.

Leffler JP. Forensic Engineering Analysis of Design and Manufacturing Practices for an Automotive Spring. *Journal of the National Academy of Forensic Engineers*, Volume 34, No. 1, June 2017, 33-42.

Leffler JP. Effects of Evidence Spoliation on Forensic Engineering Analysis of Alleged Brake Servicing Defects. *Journal of the National Academy of Forensic Engineers*, Volume 33, No. 2, December 2016, 13-21.

Leffler JP, Blanchette MG. Forensic Considerations Regarding Traction and Tribometry of Bathing Surfaces. *Journal of the National Academy of Forensic Engineers*, Volume 33, No. 1, June 2016, 37-45.

Leffler JP. Slip & Fall Continuing Education “E-course”. Claims & Litigation Management Alliance. Accessed 8/24/2015. <https://www.theclm.org/Event/ShowECourseDescription/4018>.

Leffler JP. The Changing World of Slip-and-Fall Analysis. Paper presented at: Safety 2015. Proceedings of the American Society of Safety Engineers (ASSE) Professional Development Conference; June 7-9, 2015; Dallas TX.

Leffler JP, Barré KM, Reneau AP. The Changing World of Slip-and-Fall Defense. *For The Defense*, Defense Research Institute, Chicago IL, Volume 55, No. 2, February 2013, 18-24.

Leffler JP. Forensic Engineering Investigation of Vehicle Hub Separations. *Journal of the National Academy of Forensic Engineers*, Volume 28, No. 1, June 2011, 95-111.

Leffler JP, Schlender EH. Forensic Engineering Analysis of Reliance on Standards in a Multi-Defendant Cross Claim Case. *Journal of the National Academy of Forensic Engineers*, Volume 27, No. 2, December 2010, 41- 54.

PUBLICATIONS – continued

Leffler JP. Forensic Engineering Investigation of an Alleged Plastic Chair Failure. *Journal of the National Academy of Forensic Engineers*, Volume 27, No. 2, December 2010, 55-64.

Leffler JP, Robinson JH. Forensic Engineering Investigation of Lumber Temporary Guardrails. *Journal of the National Academy of Forensic Engineers*, Volume 27, No. 1, June 2010, 15-20.

Leffler JP, Schlender EH. Forensic Engineering Investigation of a Fall from a Construction Machine. *Journal of the National Academy of Forensic Engineers*, Volume 26, No. 2, December 2009, 63-73.

Leffler JP. Forensic Engineering Investigation of Vehicle Wheel Separations. *Journal of the National Academy of Forensic Engineers*, Volume 26, No. 1, June 2009, 11-48.

Leffler JP. Forensic Engineering Use of Walkway Traction Testing. *Journal of the National Academy of Forensic Engineers*, Volume 26, No. 1, June 2009, 121-138.

Leffler JP. Forensic Engineering Use of Surrogates in Injury and Fatality Cases. *Journal of the National Academy of Forensic Engineers*, Volume 24, No. 2, December 2007, 25-38.