



Scott Duquette

PE, CFEI

Senior Managing Engineer

Department

Engineering Services

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Locations

Biography

Scott Duquette is a professional engineer with over 25 years of experience in mechanical engineering across multiple industries. He is a valued member of the YA Group team, providing forensic engineering and expert witness services with a focus on mechanical and product failure investigations.

He specializes in plumbing and appliance-related flood analysis, HVAC system evaluations, gas-related incidents—including fires and explosions—and personal injury investigations. His forensic work draws on advanced expertise in failure analysis, pressure and leak testing, and functionality assessments of plumbing systems, appliances, and mechanical assemblies. His evaluations are supported by a strong foundation in mechanical system design, manufacturing processes, and regulatory standards.

Earlier in his career, Scott worked across several technical sectors, including the machine tool industry, aerospace engineering, construction and plumbing product development, and medical device design. He began his career in precision mechanical design for machine tools before moving into aerospace applications, where he developed specialized tooling and equipment to enhance manufacturing efficiency and quality control for fluid transport systems. In the flexible tubing and piping industry, he engineered and commercialized an innovative lightning-mitigation solution for corrugated stainless steel tubing (CSST) gas distribution systems. His medical device work included the design and development of orthopedic implants and surgical instrumentation.

Throughout his career, he has applied engineering tools such as 3D CAD and finite element analysis (FEA)—including non-linear large-deformation and contact analyses—to assess complex mechanical systems and evaluate component performance and failure modes. He is also a certified building analyst and envelope professional, with experience in building diagnostics such as infiltration testing, duct leakage assessment, and residential inspections focused on moisture intrusion, pressure irregularities, and building-envelope performance.

Credentials

- PE | Professional Engineer
- CFEI | Certified Fire and Explosion Investigator from National Association of Fire Investigators (NAFI Number - 30880-18085)
- Certified Building Analyst Professional (BA-P), Building Performance Institute (BPI)
- Certified Building Envelope Professional (EP), Building Performance Institute (BPI)
- Certified Infiltration and Duct Leakage (IDL), Building Performance Institute (BPI)
- NCEES National Council Record

Representative Consulting Assignments

- Apartment Complex - Pipe Failure in Fire Sprinkler System | Investigation and analysis of CPVC piping failure resulting in an approximately \$1 million water loss in a new apartment building caused by improper assembly of a fitting joint.
- Commercial Building - Gas Explosion | Investigated the cause of a natural gas explosion in a commercial building that damaged 15+ buildings resulting from a breached underground gas line damaged from horizontal boring.
- Residential House - Gas Explosion | Investigated the cause of a natural gas explosion in a residential home that damaged 6 other homes resulting from a failed copper tube gas line.
- Outdoor Power Equipment (OPE) - Personal Injury | Investigated an alleged product defect following an injury involving outdoor power equipment (OPE). Performed an analysis of the evidence, the manufacturer's instructions, and witness statements to provide the client with an expert failure analysis opinion.
- Hotel - Water Loss | Investigation and analysis of two separate claims involving a PEX piping failure and bathtub drain failure caused by improper assembly of a fitting joint and bathtub overflow drain. Performed an analysis of the evidence, manufacturers' instructions, industry standards, witness statements, and staff interviews to provide the client with an expert failure analysis opinion.
- Product Design and Development | Developed the FlashShield corrugated stainless steel tubing (CSST) system that provides the highest lightning mitigation characteristics and is the only metallically-shielded gas piping system on the market.

Professional Experience

- 2026 - Current | Senior Managing Engineer | YA Group
- 2025 - 2026 | Senior Forensic Engineer | Jensen Hughes
- 2017 - 2025 | Senior Forensic Engineer | EFI Global, Inc.
- 2015 - 2017 | Principal and Owner | Konceptive Engineering Solutions, LLC
- 2010 - 2015 | Senior Program Manager | Kinemax Engineering PLLC and OrthoMedFlex, LLC
- 2005 - 2010 | R&D Manager and Chief Engineer | Gastite Division of Titeflex Corporation
- 2000 - 2004 | Equipment Design Engineer | Aerospace Division of Titeflex Corporation
- 1999 - 2000 | Mechanical Design Engineer | Trumpf, Inc.

Area of Practice

- Building Envelope
- Damage Assessment
- Fire Origin & Cause

Publications and Presentations

- Duquette, Scott and Wei, Fu-Shang. "Development of Piezoelectric Servo Flap Actuator," American Institute of Aeronautics and Astronautics, 2007.
- Duquette, Scott. "Development of Piezoelectric Servo Flap Actuator," 45th AIAA Aerospace Sciences Meeting and Exhibit, 2007.

- Duquette, Scott. "Development of Piezoelectric Servo Flap Actuator," 6th Annual Southern New England Science & Technology Exchange Conference, 2006.
- UNITED STATES PATENTS, US Patent 9,445,48- Energy dissipative tubes, US Patent 9,249,904- Energy dissipative tubes and methods of fabricating and installing the same, US Patent 9,169,929- Conformal wear-resistant seal, US Patent 9,107,754- Prosthetic joint assembly and prosthetic joint member, US Patent 8,794,840- Conformal wear-resistant bearing assembly, US Patent 8,685,070- Faceted bone screw, US Patent 8,616,772- Conformal wear-resistant bearing assembly, US Patent 8,399,767- Sealing devices and methods of installing energy dissipative tubing, US Patent 8,308,201- Crimp fitting for corrugated stainless steel tubing, US Patent 8,308,812- Prosthetic joint assembly and joint member therefore, US Patent 7,690,695- Sealing fitting and seal seat for stainless steel tubing, US Patent 7,621,567- Corrugated tube fitting with a ridge sealing device and method, US Patent 7,607,700- Sealing device with ridges for corrugated stainless steel tubing

Education

- University of Connecticut School of Business - Master of Business Administration - Business - Storrs - Connecticut
- University of Hartford - Master of Engineering - Mechanical Engineering - West Hartford - Connecticut
- Florida Institute of Technology - Bachelor of Science - Mechanical Engineering - Melbourne - Florida

Training Courses

- Using Warnings and Instructions to Increase Safety and Reduce Liability - University of Wisconsin
- Post Loss Equipment Evaluations - EFI Global
- Building Envelope Professional - Building Performance Institute, Inc. (BPI)
- Building Analyst Professional - Building Performance Institute, Inc. (BPI)
- Infiltration and Duct Leakage - Building Performance Institute, Inc. (BPI)
- Building Science Principles - Building Performance Institute, Inc. (BPI)
- Fundamentals of Gas Combustion - PDHonline.org
- Hot Water Plumbing Systems - PDHonline.org
- HVAC Systems and Indoor Air Quality - PDHonline.org
- Psychrometric Chart Application to HVAC Troubleshooting - PDHonline.org
- HVAC Overview of Psychrometrics - PDHonline.org
- HVAC Calculations and Duct Sizing - PDHonline.org
- HVAC Entry Level Technician - ACCA
- Mobile Elevation Work Platform (MEWP) Operator Training
- Investigation of Solid Fuel-Burning Appliance Fires, Fire Findings
- Investigation of Gas and Electric Appliance Fires, Fire Findings
- Forensic Analysis Involving Fugitive Natural Gas and Propane, SunCam
- Ethics for Engineers - Based on the NSPE Code of Ethics for Engineers, SunCam
- Florida Engineering Laws & Rules, SunCam
- Fundamentals of Interviewing, CFITrainer.net / IAAI
- Explosion Dynamics, CFITrainer.net / IAAI
- NC/SC International Association of Arson Investigators Fire Investigative Approaches Seminar; Advanced Fatal Fire Investigations, Arson Profiling, Examination of the Impact of Ventilation on Room Fires in Full-Scale Structures, SC/NC-IAAI

- AHERA-OSHA Operations & Maintenance Training Course, AAA Environmental
- Fire Investigator Scene Safety, CFITrainer.net / IAAI
- Arc Mapping Basics, CFITrainer.net / IAAI
- Residential Natural Gas Systems, CFITrainer.net / IAAI
- Investigating Natural Gas Systems, CFITrainer.net / IAAI

Affiliations

- Pi Tau Sigma (International Mechanical Engineering Honor Society)
- Beta Gamma Sigma (International Business Honor Society)
- Tau Beta Pi (National Engineering Honor Society)
- Blue Key Honor Society (National Honor Society)
- American Society of Mechanical Engineers (ASME)
- National Association of Fire Investigators (NAFI)

Licenses

- 26075 - Connecticut - Professional Engineer (PE)
- 34630 - South Carolina - Professional Engineer (PE)
- 402058178 - Virginia - Professional Engineer (PE)
- 45355 - North Carolina - Professional Engineer (PE)
- 42232 - Georgia - Professional Engineer (PE)
- 83540 - Florida - Professional Engineer (PE)
- 120483 - Tennessee - Professional Engineer (PE)