

## PROFESSIONAL EXPERIENCE

2015 to present     **Robson Forensic, Inc.**  
*Associate*

Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving design, construction, operation, maintenance and training of electrical systems, equipment and devices. Areas of expertise include:

**Industrial Controls and Automation:** electrical controls, hydraulics, pneumatics, manufacturing, assembly lines, warehousing, conveyors, robotics, automated storage and retrieval systems (ASRS), instrumentation, motion control, process control, heaters, ovens, presses, grinders, cutting, broaching, stamping presses, vision systems, motor controls, motion control, electrical control panels, PLC, HMI, MES, SCADA, data collection, alarming, digital devices, limit switches, proximity switches, photo-electric sensors, photo-eyes, ultrasonic sensors, level switches, flow switches, pressure switches, temperature switches, solenoid valves, relays, analog devices, transducers, level transmitters, flow transmitters, pressure transmitters, temperature transmitters, encoders, linear transducers, thermocouples, RTDs, AutoCAD, electrical drawings, piping and instrumentation diagram (P&ID), process flow diagrams (PFD), Bill of Materials (BOM), technical writing and training, operation/maintenance manuals, procedures and training.

**Industrial Machine Safety:** guarding, emergency stops, Lockout/Tagout, safety light curtains, safety mats, safety gates, safety area scanners, two hand controls, guard doors, safety relays, safety PLCs, safety interlocks, failsafe modes, warnings, instructions, training.

**Electrical Power Distribution:** switchgear, transformers, substations, power supplies, disconnects, fuses, circuit breakers, AC motors, DC motors, servo motors, motor controls, variable frequency drives (VFD), vector drives, motor starters, relays, contactors, uninterruptible power supplies (UPS), batteries, emergency generators, inverters, chargers, power factor, harmonics, connectors, splices, terminals, terminations, wiring, cables, receptacles, GFCI, AFCI, bus bars, power distribution blocks, grounding, lightning protection, solar systems, metering, circuit breakers, conduit, distribution panels, utility distribution utility pole/circuit inspections, and utility services.

**Appliances/Equipment:** furnaces, boilers, pumps, water heaters, ranges, stoves, dishwashers, refrigerators, space heaters, toasters, coffee pots, clothes washers, clothes dryers, dehumidifiers, dish washers, refrigerators, freezers, air conditioners, dehumidifiers, refrigeration compressors, garage doors, roll-up doors, lighting systems, metal halide lights, sodium lights, halogen lights, fluorescent light, LED lights, computers, uninterruptible power supplies, emergency power systems, batteries, power tools, vape devices, e-cigarettes, lithium-ion batteries, personal medical alert device systems, electronic medical device pump controls, battery chargers, inverters and power strips.

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Electrical Engineering, Industrial Machinery, Workplace Safety

**Industrial/Facilities/Construction Equipment:** cranes, gantries, elevators, conveyors, turn tables, lifts, material handling, packaging, shipping docks, roll-up doors, balers, compactors, palletizers, wrappers, scales, aerial lifts, boom lifts, scissor lifts, forklifts, pallet jacks, motors, speed control, HVAC systems, air conditioners, refrigeration, fans, pumps, blowers, compressors, and boilers.

**Workplace Safety:** Machine guarding, machine controls, lockout/tagout, interlocks, electrical safety, Personal Protective Equipment (PPE), emergency stops, safety light curtains, safety mats, safety gates, two hand control, work procedures, work instructions, hazard analysis, risk assessments.

**Electric Shocks / Electrocutions:** electrical shock injuries, arc flashes, electrical faults, static shocks, Ground Faults Circuit Interrupters (GFCI), Arc Fault Circuit Interrupters(AFCI).

**Fires:** Electrical causes of fires, failure analysis, fire alarm systems, smoke detectors, heat detectors, carbon monoxide detectors, gas detectors, lithium-ion batteries.

**Project Management / Construction Management / Contracting:** commercial contracts, agreements, request for quote (RFQ), proposals, purchase orders (PO), change orders, change requisition, addendums, bulletins, submittals, bid specifications, scope of work, functional specifications, factory acceptance test (FAT), site acceptance test (SAT), commissioning, verification, schedules, budgets, staffing, efficiency, utilization.

National Electrical Code, National Electrical Safety Code, Electrical Safety in the Workplace, OSHA Standards for General Industry, OSHA Electrical Safety Standards.

2015 to  
present

**Dynamo Engineering**

*President/Electrical Engineer/Consultant*

- Electrical Engineering
- Industrial Controls and Automation Design and Development
- Industrial Machinery Safeguarding and Safety Risk Assessments
- Workplace Safety Assessments
- Project Management
- Industrial/Commercial Energy Conservation

THE EXPERTS  
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1997 to  
2015

**Patti Engineering**

*Vice President of Operations*

2002-2015

- Industrial automation, control systems, machine control, process control, manufacturing automation, process control, industrial controls, project management, software development (PLC, SCADA, HMI, MES, DCS), electrical controls design, equipment installations, upgrades, power distribution, robotics, motion control, conveyor systems, assembly lines, warehousing, vision systems, RF Radios, RFID, barcode, control panel design build, machine safety, AC/DC/servo drives, CNC, pneumatics, hydraulics, alarming, data collection, data reporting, vision inspection systems, material handling, warehousing, ASRS across various industries: automotive, food, beverage, water, waste water, chemicals, manufacturing, distribution, warehousing, aggregates, etc.
- Managed all electrical controls automation projects (hardware design, software development, machine safeguarding, startups, service calls, warranty work)
- Managed project schedules, budgets and change orders
- Developed / maintained company procedures, methodologies and documentation
- Managed Engineering, HR, Accounting, Safety departments
- Recruiting, training, evaluations of engineers
- Managed CSIA Certification, UL certification
- Managed vendor partnerships
- Managed subcontractors - developed RFQ and negotiated contracts
- Forensic Engineering, Expert Witness

*Senior Electrical Controls Engineer*

1997-2002

- Lead Engineer and Project Manager on electrical controls automation projects
- Managed project schedules, budgets, specifications, contracts and change orders
- Electrical control panel design in AutoCAD
- PLC / HMI / GUI / SCADA software programming
- Machine safeguarding, Lockout, safety controls
- Onsite start-up, commissioning and troubleshooting
- Developed operation and maintenance manuals
- Trained customers on system operation and maintenance

1994 to  
1997

**Power Saving Systems**

*President/Electrical Engineer (self employed)*

- Performed industrial/commercial energy audits, analyzed electric and gas consumption
- Engineered energy and cost saving solutions, lighting upgrades, power factor correction, peak demand billing, equipment utilization
- Managed project installations, start-up and testing

# THE EXPERTS Robson Forensic

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- 1988 to 1994 **DuPont**  
*Product Development Engineer, Wilmington, DE* 1993-1994
- Developed and commercialized a fully automated biochemical instrument which detects and identifies bacteria in food
  - Optimized equipment and process parameters thru testing and statistical analysis
  - Provided onsite technical support to customers
  - Liaison between R+D, manufacturing and sales
  - Developed documentation for instrument installation, operation and maintenance
  - Trained customers on instrument installation, operation and maintenance
- Corporate Engineering Recruiter, Wilmington, DE* 1992-1993
- Interviewed, evaluated and selected BS, MS and PhD engineering candidates in all disciplines (electrical, mechanical, chemical, biological, and environmental) for placement throughout the corporation.
  - Managed and coordinated recruiting visits to numerous universities
- Project Engineer, Manufacturing Supervisor, Poughkeepsie NY/Danbury CT* 1990-1992
- Installed, started-up, operated and maintained an automated robotic manufacturing cell in a class 1 clean room producing pellicles for the electronics industry
  - Installed, started-up, operated a vacuum forming operation for pellicle packaging
  - Optimized equipment and process to improve product quality and efficiency
  - Hired, trained, supervised all operators/technicians
  - Managed production, QA, maintenance, scheduling, and raw material inventory
  - Developed all documentation for operation, maintenance and troubleshooting
- Process Engineer – Tyvek Manufacturing, Richmond VA* 1988-1990
- Increased process efficiency by improving yield, thru-put, and reliability
  - Optimized process parameters to improve product quality and yield
  - Assisted in the operation and development of the Honeywell TDC3000 Distributed Control System (DCS)
  - Assisted R+D and Marketing to develop new products
- 1986 to 1987 **Wisconsin Electric, Milwaukee, WI**  
*Distribution Engineering Technician (Co-op Student)*
- Inspected, planned, designed residential electrical services (overhead and underground)
  - Inspected, verified, inventoried electrical distribution equipment (poles, transformers, etc)
  - Updated electrical distribution layout drawings
  - Inspected overhead distribution lines
  - Inspected electrical distribution poles

THE EXPERTS  
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**PROFESSIONAL CREDENTIALS**

Professional Engineer: NCEES, Arizona, California, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, Nevada, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin

Certified Fire and Explosion Investigator (CFEI)

Certified Machine Safety Expert (CMSE)

American Boat Yacht Council (ABYC) – Marine Electrical Certification (Dec 2015)

**EDUCATION**

Bachelor of Science, Electrical Engineering

Illinois Institute of Technology, Chicago, Illinois, 1988

MBA courses: Accounting, Economics, Finance, Operations Management, Statistics, Marketing

University of Delaware, 1992-1994

Marist University, 1990-1992

University of Richmond, 1988-1990

*Training:*

OSHA approved Stand-Up Forklift Operation and Safety Certification

OSHA approved Sit Down Forklift Operation and Safety Certification

OSHA 30 Hour Construction

OSHA 30 Hour General Industry

OSHA approved Aerial Lift Operation and Safety Certification

Fire and Arson Investigator Training

Certified Machine Safety Expert

UL508A – Standard for Industrial Control panels

NFPA70 – National Electric Code

NFPA70E - Electrical Safety in the Workplace

*Continuing Education:*

Ethical Dilemmas that Arise in Every Day Engineering Practice 2023

Ethical Case Insights: Disclosure 2023

Ethical Case Part I: Disclosing, Standing Your Ground, and Conflicts 2023

Ethical Case Part II: Keeping the Public Safe, Receiving Gifts 2023

Amplifying the Current Infrastructure for the Imminent EV Transition 2023

Engineering: Addressing Unintended Consequences as a Professional 2023

National Electric Code – 2020 NEC 2023

National Electric Code – 2017 NEC 2023

Sexual Harassment in Workplace 2022

NFPA 70E Electrical Safety in the Workplace 2022

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Electrical Power Distribution and Utilization 2022  
Stand-Up Forklift Certification Training 2022  
Sit Down Forklift Certification Training 2022  
Boom Lift Certification Training 2022  
Florida PE Law 2022  
Indiana PE Law and Ethics 2022  
Open Sesame: Who can get what from your file 2022  
Real-World Ethical Challenges a Forensic Engineer Faces 2022  
Daubert 201 – Beyond the standard 2022  
Electric Power Steering And Fault Codes 2022  
Forensic Inspection of Automotive Braking Systems 2022  
Pneumatic Brake Force Calculations 2022  
Existing Site Conditions Related to Personal Injury Claim 2022  
When it Rains it Does Not Pour: Borax in a Rail Car 2022  
Hydrology and Environmental Assessment in Louisiana's First Oil Field 2022  
Rules of Thumb for Assessing Engineering Simulation 2022  
Repair/Replacement Recommendations for Commercial Roofing 2022  
Self-loosening Sediment Traps Resulting in Gas Explosions  
NFPA 101 - Life Safety Code 2021  
Ethics : Conflicts of Interest - Employers and Clients 2021  
Ethics : Conflicts of Interest - Vendors and Colleagues 2021  
Ethics : Conflicts of Interest - Serving the Public 2021  
Ethics : Engineering Ethics and the Law 2021  
How To Be An Effective Witness 2021  
Saint Joseph Water Crisis - Lessons Learned 2021  
PE's Role on Artificial Intelligence and Technology 2021  
Winds of Changes - Electric Transmission 2021  
Florida PE Law 2021  
Certified Machine Safety Expert training 2020  
Machine Safeguarding and Functional Safety Training 2020  
Explosion Dynamics 2020  
Investigating Natural Gas Systems 2020  
OSHA 30 Hour Construction 2020  
American Safety Council  
Fire Investigation Training 2020  
Aerial Lift Operation 2020  
Emotional Intelligence for Engineers 2020  
Engineering Ethics: Ethics, Forensics and the PE 2020  
Engineering Ethics: Conflicts of Interest 2020  
Engineering Ethics: Engineering Expert 2020  
Fire Investigation Training Program 28 Hour, 2020  
OSHA Machine Safeguarding, 2019  
OSHA Hazard Control, 2019  
Ethics: PE as an Expert Witness, 2019  
Architects & Engineers - Impact of Changing Technology and Experience, 2019

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Ethics: PE and Domestic and International Gifts, 2019  
Prevention Through Design, 2019  
Hurricane Engineering Response: Restoring Power to Puerto Rico, 2019  
NFPA 72 - Fire Alarm Code, 2019  
Forensic Engineering Depositions, 2019  
Insurance Fundamentals for Forensic Engineers, 2019  
Ethics, Law and Public Policy Affecting Forensic Engineers, 2019  
Resolving Schedule Delay Claims with Forensic Analysis, 2019  
Electrocutions and Downed Power Lines, 2019  
The Kaprun Ski Train: A Disaster Waiting to Happen, 2019  
Arc Mapping, 2019  
Fires From Reflected Sunlight from Glass Windows, 2019  
Arc Mapping in a Residential Kitchen Fire Investigation, 2019  
Pinched Power Cord is Latent Defect Causing Fire, 2019  
Fire Alarm and Detection Systems, 2019  
Fire Protection Systems, 2018,  
Electric Power Distribution Systems, 2018,  
Battery & Other Electricity Storage Technologies, 2018,  
Interior Electrical Distribution Systems, 2018,  
Electric Power Requirements for Buildings, 2018,  
Guide to Electrical Distribution Systems, 2018,  
Indiana PE Law and Ethics, 2018,  
Florida PE Law, 2018,  
Control Methods of AC Induction Motors, 2018,  
Design Professionals Contract Review, 2018,  
Advanced Fire Investigation for Professional Engineers, 2018,  
Fire due to Intentional Deviation from Design, 2018,  
Forensic Analysis of a Fire and Overfilled Propane Cylinder, 2018,  
Forensic Analysis of Hot Socket Problems in Electrical Meters, 2018,  
Forensic Analysis of a Cloned Ignition Coil Pack, 2018,  
Forensic Investigation of Furnace Oil Supply Line Fitting Leak, 2018,  
Forensic Analysis of Residential and Commercial Chairs, 2018,  
Forensic Analysis - Misuse of Pressure Vessel Codes, 2018,  
Solar Insolation Parameters for FE Applications, 2018,  
Aerial-Scissor Lift Certification Training 2017  
Pallet Jack Electric Certification Training 2017  
Sit-Down Forklift Certification Training 2017  
Ethics: Conflicts of Interest, 2017,  
Ethics: Autonomous Vehicles: Who's in the Driver's Seat?, 2017,  
Ethics: Licensure and Professional Practice Concerns, 2017,  
Ethics: Lessons from Forensic Engineer, 2017,  
Ethics: Protecting the Public Health and Safety & Demonstrating Competence, 2017,  
Fire Investigation - Electrical Arc Mapping, 2017,  
Residential Natural Gas Systems, 2017,  
Residential Electrical Systems, 2017,

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OSHA General Industry - OSHA 29 CFR 1910 - 30 Hr, 2017,  
Investigation of Gas and Electric Appliance Fires, 2017,  
IEEE 3006.7 Reliability of Continuous Power Systems in Industrial and Commercial Facilities,  
2017,  
LED Street Lighting, 2017,  
Design Professional Legal Liability workshop, 2017,  
AC vs DC: Resurrection of Westinghouse and Edison debate, 2017,  
Residential Building Construction, 2016  
Reduce Scope Creep and Get Paid for Extra Services, 2016  
Selling the Professional Services Firm: Architects and Engineers, 2016  
Seven Secrets of Super Successful Project Managers, 2016  
Ethics: Conflicts of Interest, Confidentiality and the Public Health Safety Welfare, 2016  
Ethics: Employment and Professional Practice, 2016  
Ten Uber-Trends Changing Everything in Business and Our World, 2016  
Ethics Forum: Engineering Expert Witnesses and Litigation, 2016  
Texas Statutes, Rules, and Ethics for Professional Engineers, 2016  
Wisconsin Statutes, Rules, and Ethics for Professional Engineers, 2016  
Indiana Statutes, Rules, and Ethics for Professional Engineers, 2016  
New Battery Technologies, 2016  
Understanding Fire through the Candle Experiments, 2016  
Fire Investigator - Scene Safety, 2016  
Fire and Arson Investigator Academy, 2016  
Fire Investigator - Scientific Method, 2016  
Marine Electrical Training and Certification, 2015  
Electric Shock Drowning, 2015  
NFPA 70E - Electrical Safety in the Workplace, 2015  
NFPA 70 - National Electric Code, 2015  
Electric Power Substations, 2015  
Electric Power Generation, 2015  
Electric Power Transmission and Distribution, 2015  
The Pros & Cons of Using Consultants, 2015  
Ethics and Sustainable Development, 2015  
Team Building Skills for Engineers, 2015  
Leading as an Engineering Responsibility, 2015  
Seven Secrets to Successful Negotiation, 2015  
Ethics and Risk Management, 2015  
Engineering Ethics: Professional Issues, 2015  
How Effective Leaders Manage Conflict, 2015  
Fire Investigators 10 Most Common Errors, 2015  
Fire Investigators Report Writing, 2015  
Engineering Ethics: Technical Issues, 2015  
Engineering Ethics: Business Issues, 2015  
Expert Witness Daubert Challenge, 2015  
Chemistry of Fire, 2015  
Engineering Ethics Expert Witness and Engineering Review Issues, 2014



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Conduct Effective Meetings, 2013  
NSPE –Conflicts of Interest Proposed Federal Rules, 2013  
Federal Contracting Laws, 2013  
Legal Realities of Project Scheduling, 2013  
Strategic Planning, 2013  
Maintaining Objectivity Truthfulness, Preserving Confidentiality, 2013  
Impact of the Ongoing Economic Crisis on Engineering Ethics, 2013  
Project Management and Ethics, 2013  
Whistleblowing - PEs Obligations to Report Misconduct, 2013  
Project Management, 2012

### **PROFESSIONAL MEMBERSHIPS**

National Academy of Forensic Engineers (NAFE)  
National Society of Professional Engineers (NSPE)  
Michigan Society of Professional Engineers (MSPE)  
National Fire Protection Association (NFPA)  
Nation Association Fire Investigators (NAFI)  
American Association of Safety Engineers (ASSE)  
Institute of Electrical and Electronics Engineers (IEEE)  
Underwriters Laboratories Standards Technical Panel 2011 – Industrial Machinery  
Underwriters Laboratories Standards Technical Panel 60947 - Industrial Control Equipment,  
Low-Voltage Switchgear and Controlgear, Contactors and Motor Starters  
Underwriters Laboratories Standards Technical Panel 61496 - Safety Light Curtains  
Underwriters Laboratories Standards Technical Panel 60730D - Timer Controls  
Underwriters Laboratories Standards Technical Panel 60730E - Appliance Controls  
Underwriters Laboratories Standards Technical Panel 1998 - Software in Programmable  
Components  
Underwriters Laboratories Standards Technical Panel 1026 - Electric Cooking Appliances  
Underwriters Laboratories Standards Technical Panel 2157 - Electric Clothes Washers and  
Dryers

### **PUBLICATIONS AND PRESENTATIONS**

Siemens Automation Summit – Users Technical Conference presentation, Time to Market -  
Engine Assembly Build during Production, June 2014  
Indusoft webinar presentation, System Integrator Best Practices Webinar, March 2013  
Control System Integrators Association – Annual Conference presentation, Top 5 Secrets to  
Passing the CSIA Registration Audit, April 2003

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#### **OTHER EXPERIENCE**

Boating (inland water): Recreational boating, PWC's (sit-down and stand-up), kayaks and canoes, including maintenance, modifications, repairs, rebuilding. Boating safety navigation rules/laws. Completed Safety Certification training

Snowmobiling: Recreational snowmobiling, including maintenance, repairs, rebuilding. Snowmobiling rules/laws. Completed Safety Certification training

Automobiles classic/historic: maintenance, modifications, repairs, rebuilding

Home Remodeling: Completely restored/remodeled a 95 year home - electrical, plumbing, mechanical, framing, stairs, cabinetry, roofing, siding, decking

Sports and activities: swimming, biking, running, triathlons, boating, canoeing, kayaking

#### **VOLUNTEER ACTIVITIES**

First Robotics: Mentor/Coach for High School robotics team. Robot Inspector, 2010-2015

Christmas in Action: home renovation projects for the elderly, 2005-present

Meals on Wheels: deliver meals to the elderly, 2002-present

Boy Scouts of America: Assistant Scoutmaster, Eagle Scout Advisor, Treasurer, 2000-2014

Habitat for Humanity: home building – framing, roofing, siding, drywall, trim, cabinetry, painting, electrical, plumbing, managed electrical, mechanical, plumbing, and foundation contractors, 1994-2004

Science Olympiad: Elementary School Charged Up (electricity) event supervisor 2019-pres