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Matthew C. Wood, P.Eng.

Professional Engineer, Fire investigation

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Education

UNIVERSITY OF GUELPH

2004

Baccalaureate in Science in Engineering, Biological Engineering Courses Included: Chemistry, Physics, Engineering Mechanics, Material Science, Engineering Systems Analysis, Fluid Mechanics, (Electrical) Network Theory, Thermodynamics, Electrical Devices, Structure and Application of Microcomputers, Systems and Control Theory, Heat and Mass Transfer, and Bio-Instrumentation Design

Experience

ROAR ENGINEERING

2017 - PRESENT

Forensic Engineer

Fire origin and cause investigations for the following: residential, commercial, and industrial fires and explosions; and, vehicle fires and explosions. Investigations completed in accordance with National Fire Protection Association (NFPA) 921 "Guide for Fire and Explosion Investigations". Around 500 investigations completed as lead investigator over entire career. Cause hypothesis testing involving the review of peer-reviewed research, independent testing, and examination of exemplar devices and products. Detailed review of applicable codes, standards, and installation and maintenance instructions for products, appliances, and systems, including evaluation of evolution of said documents over time. Preparation of comprehensive reports for the above investigations, completed in accordance with the requirements for an Expert's report as required by the Rules of Civil Procedure.

ROCHON ENGINEERING INC.

2004-2009

Forensic Engineer

Conducted fire scene and vehicle fire origin and cause investigations in accordance with NFPA 921 "Guide for Fire and Explosion Investigations" and prepared forensic engineering origin and cause reports for clients. Examined evidence to determine the mode of failure and/or establish facts concerning the origin, cause, or spread of a fire. Researched relevant acts, regulations, code

standards and guidelines, as well as reviewed product literature and conducted failure mode and effects analysis. Prepared curriculum and presentation materials for Fire & Explosion Investigation Courses. Trained and mentored incoming fire investigation staff members.

Additional Courses and Seminars

**CFI Trainer.net, International Association of Arson Investigators¹ 2020
43 Credit Hours**

Accreditation, Certification, and Certificates; Charting Your Career Path in Fire Investigation; Critical Thinking Solves Cases; Discovery in Civil Cases; Discovery in Criminal Cases; DNA; Ethical Duties Beyond the Fire Scene; Ethics & Social Media; Fire Dynamics Calculations - Version 2.0; Fire Flow Analysis; Fire Investigation for Fire Officers; How First Responders Impact the Fire Investigation; Introduction to Appliances; and, Writing the Initial Origin and Cause Report

**Underwriters Laboratories Firefighter Safety Research Institute 2020
7 Credit Hours**

Air Entrainment by Fire Service Hose Streams; Evidence-Based Approaches to Reduce Exposure Risks; Introduction to Heat Transfer and Fire Measurements; Research for the Development of More Effective Tactics; The Science of Interior and Transitional Suppression Tactics in Single Family Homes; and, Water Mapping in Residential Structures

International Association of Arson Investigators, BC Chapter 15

Dealing with Fire Investigations Involving Fatalities by Assistant Fire Chief Ray Bryant, Vancouver Fire Rescue Services, *October 2019*

**Ackland and Sander Consulting 2020
12 Credit Hours**

Prevention and Investigation of Commercial Kitchen Fires

**CFI Trainer.net, International Association of Arson Investigators 2019
32 Credit Hours**

Charleston Sofa Super Store Fire; Investigating Fatal Fires; MagneTek: A Case Study In The Daubert Challenge; Critical Evaluation and Testing of Commonly Reported Accidental Causes; Motive, Means, and Opportunity: Determining Responsibility in an Arson Case; Insurance and the Fire Investigation; Understanding Undetermined; and, Managing Complex Fire Scene Investigations; and, Digital Photography and the Fire Investigator

International Association of Arson Investigators

Applied Visual Analytics for Fire Investigations by Dale Zlock of the National Insurance Crime Bureau, February 2019

International Association of Arson Investigators, BC Chapter 15

Fire Scene Photography & Litigation and Legal aspects of Information Sharing on the Fire Scene, December 2018

**International Association of Arson Investigators, BC Chapter 15 2018
40 Credit Hours**

Annual Fire & Explosion Investigation Training Program

¹ Please see <https://www.cfitrainer.net/Library/Resources-Public/NFPA1033.pdf> for a document detailing the correlations between the various training modules and the job performance requirements mandated in NFPA 1033: Standard for Professional Qualifications for Fire Investigator.



Engineers and Geoscientists British Columbia & WorkSafeBC

Workers' Safety: Your Role and Responsibilities as a Professional Engineer and Geoscientist, May 2018

International Association of Arson Investigators, BC Chapter 15

Fire Deaths in Single-Family Homes: New Research studying Fuel Volatility and Ventilation, and Large-Scale Exterior Cladding Use and Fire Risk Consideration in Canada, *April 2018*

CFI Trainer.net, International Association of Arson Investigators 2018 69 Credit Hours

An Analysis of the Station Nightclub Fire; Documenting the Event; Effective Investigation and Testimony; Electrical Safety; Ethics and the Fire Investigator; Evidence Examination: What Happens at the Lab?; Fire Investigator Scene Safety; Fundamentals of Interviewing; Introduction to Evidence; Introduction to Youth-Set Fires; Legal Aspects of Investigating Youth-Set Fires; Motor Vehicles: The Engine and the Ignition, Electrical, and Fuel Systems; Motor Vehicles: Transmission, Exhaust, Brake, and Accessory Systems; NFPA 921 and 1033 2014 Editions: Important Revisions; NFPA 1033 and Your Career; Physical Evidence at the Fire Scene; Post-Flashover Fires; Process of Elimination; The Impact of Ventilation in Building Structures on Fire Development; The Practical Application of the Relationship Between NFPA 1033 and NFPA 921; and, The Scientific Method for Fire and Explosion Investigation

CFI Trainer.net, International Association of Arson Investigators 2017 46 Credit Hours

Arc Mapping Basics; Basic Electricity; Explosion Dynamics; Fire Chemistry; Fire Protection Systems; Fundamentals of Residential Building Construction; Introduction to Fire Dynamics and Modelling; Investigating Motor Vehicle Fires; Investigating Natural Gas Systems; Residential Electrical Systems; Residential Natural Gas Systems; Thermometry, Heat, and Heat Transfer; and, Understanding Fire Through the Candle Experiments

The National Association of Fire Investigators (NAFI)

Vehicle Fire, Arson & Explosion Investigation Science & Technology Seminar, *September 2007*
International Symposium of Fire Investigation Science & Technology, *June 2006*

International Association of Arson Investigators, Idaho Chapter

The Principles of Electrical Fires ("Electrical Fires 102"), *November 2005*

Educational Programs Innovation Centre (EPIC)

Ontario's Electrical Safety Code, *December 2004*

Fire Findings

Investigation of Gas and Electric Appliance Fires, *October 2004*

The National Association of Fire Investigators (NAFI) & The National Fire Protection Association (NFPA)

National Fire, Arson and Explosion Investigation Training Program, August 2004 Certified Fire Investigation Instructor Seminar, *August 2004*



Professional Memberships & Certifications

International Association of Arson Investigators (IAAI)

Member #1400562

BC Chapter 15, Member #201399

Secretary (2019 – Present)

Professional Engineers of Ontario (PEO)

Professional Engineer (P.Eng.), License #100081232

Engineers and Geoscientists British Columbia (EGBC)

Professional Engineer (P.Eng.), License #46270, Member ID #206691

National Association of Fire Investigators (NAFI)

Member #10107iv

Certified Fire and Explosion Investigator (CFEI)

Certified Vehicle Fire Investigator (CVFI)

Certified Fire Investigation Instructor (CFII)

Publications

Wood, Matthew C., 2018, “**Fires Involving Christmas Trees and Decorative Lights**”²

Wood, Matthew C., 2018, “**High-Intensity Disaster: Could Insurers Prevent Millions in MetalHalide Losses?**”

² Included in the Canadian Association of Fire Investigators (CAFI) Journal, Volume 4, 2018.
Matthew C. Wood

