

# Robson Forensic

Engineers, Architects, Scientists & Fire Investigators

**THOMAS D. SMITH, Ph.D., P.E.**  
**Electrical Engineer**

## PROFESSIONAL EXPERIENCE

2001 to present **Robson Forensic, Inc.**  
*Associate*

Provides technical investigations, analysis, reports and testimony toward the resolution of forensic and intellectual property litigation involving electronic circuits, sensors and controls. This includes measurement of physical parameters in accident/incident analysis and reconstruction including analog and digital electronics-microelectronics/firmware, software, control circuit analysis and design application/analysis. Provides analysis/evaluation of electronic device performance capabilities, limitations and failure modes in forensic context.

- Rail transit vehicles, depth finders, cell phones, telephones, electronic device induced hearing loss, motorized wheelchairs, industrial trolley position controls, electronic cruise control.
- Projection TV's, large screen TV's, acoustic analysis, acoustic devices, signal processing, audio enhancement.
- Treadmills, radio controlled aircraft, radios, fires, boat autopilot controls.
- Electric power distribution, electric and magnetic field measurements and analysis.

1985 to present **New Century Engineering, Inc.**

Conduct failure analysis, fire causation and intellectual property investigations. Developed complex electronic systems for imaging, radio frequency (RF) & video communications, electronic control systems, acoustic source location, and specialized sensor applications for commercial, medical and military use. Electro-optic hostile weapon location system (3 patents).

- AMRFS program intrusion detection audio, RF, vibration sensor technologies
- Airborne radar system engineering
- C<sup>4</sup>I for land warfare
- Programmable syntactic pattern recognition based processing
- Intellectual property expert evaluation; investigate characteristics of alarm systems, game & simulation products, appliance and integrated home control systems and software
- Vehicle fire causation
- Patent infringement, such as, automobile electronic security system, computer game concept, military gunfire detection/localization

1997 to 2000 **United Defense LP**

System concept development, requirements analysis and formulation; analysis of DoD programs for potential applicability to platform technology development support.

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- Acousto-optic top attack warning system
- U2 vehicle program
- Future Light Combat Vehicle (FLCV)
- Grizzly mine clearing vehicle automatic depth control system

### 1981 to **Bell Telephone Laboratories**

1983 System requirements analysis and definition for multiple technology sensor signal processor designed to process sensor signals, modular processor analysis/design.

- Modular processor system design
- Wide Band Acoustic Recall System (WBAR)
- Sonar surveillance system analysis

### 1970 to **Johns Hopkins University, Applied Physics Laboratory**

1981 Medical studies in conjunction with The Johns Hopkins Hospital Medical Institutions (JHMI). Passive Sonar System to determine the bearing to active sonar transmissions; system concept development, extensive laboratory and at-sea testing, test plan preparation, data analysis. Fire control RADAR applications, computer aided system modeling/simulation and analysis, velocity and range measurement techniques.

- A-V malformation embolism device-joint surgical study with JHMI Neurosurgeon
- Physiological/medical electronic instrumentation R&D
- Evaluation/application of physiological/medical electronic instrumentation R&D
- Medical applications of ultrasound.
- Sonar intercept receiver program
- Ocean data acquisition program
- Aegis shipboard radar systems engineering
- Sonar/underwater acoustics research and applications
- Special purpose sonar system/guidance system

### 1963 to **Westinghouse Electric Corporation**

1970 (Military Service: U.S. Army, 1964-1966)

Airborne radar-synthetic aperture RADAR with beam sharpening, processor design and analysis. Acoustic array development for helicopter mounted gunfire detection system.

- Airborne RADAR system and circuit design
- Acoustic gunfire locator system

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## PROFESSIONAL CREDENTIALS

Professional Engineer: Michigan

## EDUCATION

Ph.D., Electrical Engineering, University of Maryland, College Park, Maryland  
Major: Electrical Engineering, Signal Analysis; System and Circuit Theory  
Minor: Mathematics, Control Systems, Biomedical Engineering

M.S., Electrical Engineering, University of Maryland, College Park, Maryland

B.S., Electrical Engineering, Virginia Polytechnic Institute and State University,  
Blacksburg, Virginia

## PROFESSIONAL MEMBERSHIPS

Institute of Electrical and Electronics Engineers, Senior Member:  
Engineering In Medicine and Biology Group  
Instrumentation and Measurement Group  
Sonics and Ultrasonics Group  
Signal Processing Group  
Electrical Engineering Honorary Society Eta Kappa Nu

## PATENT APPLICATIONS AND DISCLOSURES

Patent Award (4)  
Disclosures (24)

Applications in Preparation (3)  
Disclosure Award (1)

## PUBLICATIONS

“Reference File Formation in Programmable Pattern Recognition,” Army Research Laboratory Acoustics Conference, June 1994.

“Signature Identification Using Programmable Pattern Recognition,” Fourth Annual Ground Target Modeling and Validation Conference, Houghton, Michigan, August, 1993.

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“Absence of pulsatile midline-echo as determination of cerebral death,” Second Meeting of the World Federation for Ultrasound in Medicine and Biology, Miyazaki, Japan, July, 1979.

“Pulsatile cerebral echo in diagnosis of brain death,” Journal of Neurosurgery 48:866-875, 1978.

“Measurement of Acoustical Parameters and Transducer Acceleration in Pulsatile Echoencephalography,” Ph.D. Thesis.

EXPERT NOT RETAINED