



SILVER WOLF

Consulting & Engineering, Inc.

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DAVID J. SILVER, PRESIDENT, PhD, C.I.H., L.A.C.

Profile

- ❖ Qualified and experienced Industrial Hygienist, Certified by the Board of American Industrial Hygiene and a successful 25-plus year track record in the Occupational Safety and Health profession.
- ❖ Provides expert occupational safety and health consultations and expert witness services.
- ❖ Founder and President of Silver Wolf Consulting & Engineering, Inc. Industrial hygiene consulting, indoor air quality investigations, asbestos surveys, lead abatement, remediation plans and specifications, determine worker exposures to gases, vapors, occupational noise, heat, particulate and ergonomic factors. Environmental consulting, phase I and II site assessments, hazardous contamination specifications and remediation.
- ❖ Founder and President of CIH Equipment Company. Rental, calibration and repair of Industrial Hygiene instrumentation including direct reading instruments, sound level meters, ventilation test equipment, air monitors and heat stress meters. Developed NIST traceable calibration laboratories – acoustic lab for sound meters, piston prover lab for flow velocity, environmental chamber for heat stress, relative humidity, gas generation laboratory, mass concentration monitor and multichannel optical particle counter laboratories.
- ❖ Communications Director of the Florida Industrial Hygiene Association (FLAIHA). Wrote and edited newspaper articles and disseminated newsletter to members.
- ❖ Demonstrated accuracy in researching hazardous work practices, conditions and safety standard violations.
- ❖ Patented surface sampler, an automatic surface sampler to uniformly collect contaminants onto media.

Certifications and Designations

- ❖ American Board of Industrial Hygiene
 - Certified Industrial Hygienist (CIH), Serial No. 4319, Issued 1989
- ❖ Department of Professional Regulation
 - Florida Licensed Asbestos Consultant (LAC), Serial No. IA0000036, Issued 1990

Education

University of South Florida – Tampa, Florida
Ph.D. – Environmental and Occupational Health, 2006

Wayne State University – Detroit, Michigan
M.S. – Industrial Hygiene, 1985

Wayne State University – Detroit, Michigan
B.A. – Chemistry, 1983

Ancillary Safety, Health and Environmental Training and Education

- ❖ AIHA
 - Risk Analysis Workshop
- ❖ University of Florida– Gainesville, Florida
 - Phase I Site Assessment Course
- ❖ University of Florida– Gainesville, Florida
 - Asbestos Inspector
 - Asbestos Management Planner
 - Supervisor Asbestos Course
- ❖ META – Tampa, Florida
 - Project Designer
- ❖ Pennsylvania State University – on line Course
 - Noise Assessment and Control Course

Skills Summary

- Airborne Sampling of Gases, Vapors and Aerosols – Worker Exposure / OSHA.
- Indoor Air Quality Investigations – Commercial and Residential.
- Asbestos and Lead Surveys on buildings and structures per EPA and OSHA.
- Expert Witness – industrial hygiene, pesticides, indoor air quality, and asbestos.
- Ventilation Assessments – General and local exhaust measurement, assessment & design
- Noise Assessments – Occupational and Community Noise Measurement
- Instructor– HAZWOPER, hazard communication, confined space entry, respiratory protection, asbestos, lead, blood borne pathogens, electrical safety and personal protective equipment.
- Potent Compound Airborne Sampling of Pharmaceutical Drugs – Worker Exposure
- Mercury contamination management including monitoring and occupancy determination.
- Plans and Specifications – asbestos, lead, hazardous waste site safety & health & mold.
- Asbestos Management & Training (EPA & OSHA).
- Hospital Exposures – issues unique to hospitals – ventilation, infection, solvents.
- Material Safety Data Sheets – research and write MSDSs for manufacturer’s products.

Professional Affiliations and Memberships

- ❖ American Industrial Hygiene Association – Since 1986
- ❖ Florida Industrial Hygiene Association - Since 1990
- ❖ Communications Director – 2004-2006
- ❖ American Association of Aerosol Research – Since 2004
- ❖ Acoustic Society of America – Since 2002

Professional Experience

Exposure Evaluation Reports:

Worker Exposure Determination- Accutain, Lactose, Progesterone, Pharmaceutical Manufacturer, Largo, Florida. Specialized Industrial Hygiene sampling techniques and analytical procedures were applied to determine eight-hour time weighted averages of potent compounds.

Worker Exposure Determination- Metals. Waste to Energy Plant, St. Petersburg, Florida. Industrial Hygiene sampling techniques and NIOSH analytical procedures were used to determine eight-hour time weighted averages of metals.

Worker Exposure Determination- Silica. Concrete resurfacing, New Port Richey, Florida. Industrial Hygiene sampling techniques and NIOSH analytical procedures were applied to determine eight-hour time weighted averages of crystalline silica.

Hood Performance Evaluation. Food Additive Manufacturing Facility, Safety Harbor, Florida. Certified laboratory hoods in production and laboratories.

Radioactivity Determination from Cooling Tower. Hospital, St. Petersburg, Florida. Using a general-purpose radiation detector, determined compliance with current OSHA limits.

Worker Exposure Determination - phosphoric acid, sulfuric acid and nuisance dust. Medical Manufacturer, Largo, Florida. Industrial Hygiene sampling techniques and NIOSH analytical procedures were used to determine eight-hour time weighted averages of acids and dust.

Ventilation Assessment. Histology Laboratory, Hospital, Pasco County, Florida. Determined effectiveness of local exhaust and general ventilation in controlling vapors from xylene, formaldehyde and other solvents.

Mercury Contamination Assessment. Residence, Sarasota, Florida. Determined if mercury vapor levels met current EPA criteria for safe re-occupancy of a home after mercury cleanup.

Pathway Determination of d-limonene from Source to Occupants in an Administration Building. University, Florida. Provided expert testimony regarding d-limonene as a source contaminant migrating to affected occupants.

Foul Odors as Hydrogen Sulfide in an Apartment Building. Tampa, Florida. Measured hydrogen sulfide with a direct reading instrument to determine if the source could generate levels above the odor threshold.

Channel 13 News Story: Perchloroethylene in the Dry Cleaning Industry; New Worlds Communications.

Passive dosimetry badges were used to determine perchloroethylene levels to persons exposed to their dry cleaning during pick-up, storage and wear. Risk estimates were used with the exposure data to determine individual risk.

Hazardous Waste Site Safety & Operations Training: Hamreich Aerial Surveys, Clearwater, Florida.

Workers were trained in accordance with OSHA's 29 CFR 1910.120. Classroom instruction included hazardous properties of chemical wastes, field identification, toxicology, lab packs, drums, monitoring, personal protective equipment, integument protection, respirators, site control, decontamination, sampling, hazard communication, blood borne pathogens, confined space entry, lockout/tag out, first aid and medical surveillance.

Blood borne Pathogen Program: AT&T Paradyne, Largo, Florida.

Developed a written blood borne pathogen program for the entire facility and personnel. Work groups at risk included the medical clinic and janitorial.

Ventilation Assessment: AT&T Paradyne, Largo, Florida.

Inspected HVAC systems with regard to indoor air quality in the entire facility. Also inspected the industrial ventilation systems in the production facility. Generated a workable database of findings and recommendations for future reference.

Worker Exposure Determination - Welding Fumes: Manufacturing Plant, Sarasota, Florida.

Industrial Hygiene sampling techniques and NIOSH analytical procedures were used to determine eight-hour time weighted averages of cadmium, lead, silver, and tin to workers. Work included ventilation testing and recommending engineering controls.

Ventilation Assessment and Engineering Control Evaluation: Potting Room, Manufacturing Facility, Sarasota, Florida.

Measured and tested the airflow from slot ventilation hoods, evaluated work procedures and recommended appropriate engineering controls.

Worker Exposure Determination - Airborne Iodine Concentration: Hydrotherapy Department, Hospital, Tampa, Florida.

Conducted "worst case scenario" sampling directly adjacent to hydrotherapy baths to determine if emissions were above PELs.

Ambient Hydrogen Sulfide Determination: Laboratory Hood, Research Laboratory, Clearwater, Florida.

Determined airborne concentrations of hydrogen sulfide and measured the airflow of the laboratory hood.

Worker Exposure Determination - Chloropicrin, Methyl Bromide and Methyl Mercaptan: Private Residence, Port Charlotte, Florida.

Determined airborne concentrations using the latest and most sensitive NIOSH sampling and analytical technique. This information was used to develop a case in which homeowners alleged contamination after a pesticide application.

Worker Exposure Determination - Industrial Hygiene Audit: Manufacturing Plant, Sarasota, Florida.

Work included a complete audit of materials, processes, exposure potential and engineering controls inside the plant. Areas requiring further attention were detailed in the report.

Worker Exposure Determination - Specified Airborne Vapors and Adequate Lighting. Manufacturing Plant, Sarasota, Florida.

Determined the effectiveness of lighting in the tool room. Determined the 8-hour TWA of monomer vapors of workers using an automatic potting dispenser.

Respiratory Protection Program and Confined Space Entry Testing Program Development: Interior Coating of Fuel Tanks, Guantanamo Bay, Cuba.

Developed written programs based on the contractor's activities and use of respirators.

Worker Exposure Determination - Ethylene Oxide, Regulatory Compliance Evaluation and Recommendations: Sterilization Unit, Medical Equipment Manufacturer, Tampa, Florida.

Determined exposures using the latest NIOSH sampling and analytical technique. Evaluated adherence to the ethylene oxide standard.

Worker Exposure Determination - Noise and n-Hexane Exposure Determination: Medical Manufacturer, Tampa, Florida.

Noise dosimeters were placed on workers to determine their exposures. Also, determined 8-hour TWA exposures of workers exposed to n-Hexane during an assembly process.

Worker Training: Guantanamo Bay, Cuba.

Trained hazardous waste incinerator workers regarding blood borne pathogens, respiratory protection, confined space entry, and lockout/tag out procedures.

Preparation of Material Safety Data Sheets: Manufacturer, Florida.

Prepared material safety data sheets based on the latest toxicological research, regulatory standards, and safe handling procedures.

Worker Exposure Determination - Flour Dust: Bakery, Lakeland, Florida.

Open-faced cassettes and SKC cyclone attachments were used to measure total and respirable dust exposures to workers.

Worker Exposure Determination - Inorganic Mercury Vapor, Calibration Laboratory, Medical Equipment Manufacturer, Tampa, Florida.

Using a direct reading instrument and sampling media, worker exposure to mercury vapor was determined.

Preparation of Federal Hazard Communication Modules and Standard Operating Procedures for Industrial Hygiene Instrumentation: DOE, Largo, Florida.

Prepared training modules for a variety of topics to be included in Right-to-Know Training. Constructed operation, calibration and survey procedures for twenty-five industrial hygiene instruments.

Worker Exposure Determination - Airborne Ink Aerosol: Printing Department, Power Company Headquarters, St. Petersburg, Florida.

Determined exposures of workers using the latest NIOSH sampling and analytical technique. Work included engineering control evaluation and recommendations.

Expert Witness: Pesticide Application Case, Tampa, Florida.

Provided expert testimony regarding sampling and analytical techniques used during an evaluation of chemical exposures inside a private residence.

Worker Exposure Determination - Respirable and Total Dust: Tampa, Florida.

Measured total and respirable dust exposure to workers for preparation of a case in which the tenant was alleging residual contamination.

Indoor Air Quality and Worker Exposure Determination - Chlorpyrifos Exposure: Savings Bank, Dunedin, Florida.

Exposures were assessed using the latest NIOSH sampling and analytical technique. This was done in response to employee health complaints after the building was sprayed with pesticide.

Occupational and Community Noise Projects

Community Noise Assessment. Landfill Operation, Perry Hall, Maryland. Measured generated noise at the sources and neighborhood boundaries. Determined compliance with EPA and local ordinances.

Worker Exposure Determination - Noise Survey and Recommendations for Engineering Controls. Aerospace Company, Jacksonville, Florida. Determined noise sources, performed frequency analysis and designed engineering controls to reduce worker exposures and to create a quieter environment for communication.

Worker Exposure Determination - Occupational Noise: Laundry Room, Hospital, St. Petersburg, Florida.

A sound level meter and dosimeters were used to measure personnel exposures and noise within the area. The report detailed workers to be included in the program, engineering control recommendations and follow-up action.

Worker Exposure Determination - Noise and n-Hexane Exposure Determination: Medical Manufacturer, Tampa, Florida.

Noise dosimeters were placed on workers to determine their exposures. Also, determined 8-hour TWA exposures of workers exposed to n-Hexane during an assembly process.

Hazardous Materials Remediation Projects

Mercury Spill Remediation: Riviera Middle School, St. Petersburg, Florida.

Conducted worker exposure monitoring to determine appropriate personal protective equipment. Oversaw operations with regard to remediation techniques, decontamination and hazardous waste disposal. Cleared rooms for safe re-occupancy using wipe samples and air testing.

Residual Explosives Ordnance Remediation Project: Milan, Tennessee.

Designed the health and safety plan for the preparation, construction, and operation of a groundwater treatment plant. The plan included worker protection during excavation activities, levels of personal protective equipment during all project phases, and decontamination procedures.

Mercury Spill Remediation: Lake Gibson High School, Polk County, Florida.

Surveyed the entire facility for mercury contamination using a Jerome 431 mercury analyzer. Advised the remediation contractor regarding cleaning techniques and hazardous waste management. Conducted worker exposure monitoring and clearance testing.

Lead Ammunition Dust Abatement Project: Gun Range, Tampa, Florida.

Designed the lead abatement strategy, supervised the remediation, and provided all air and clearance wipe sampling for the project.

Ordnance Manufacturing Facility Abatement Project: Kennedy Space Center, Florida.

Prepared abatement strategy, and advised personnel regarding cadmium and chromium dust clean up.

Nitroglycerin-based Propellant Exposure Assessments: Ordnance Manufacturing Plant, Melbourne, Florida.

Provided monitoring services to determine worker exposure levels, including conducting 8-hour time-weighted averages.

Air Quality Projects

Indoor Air Quality Investigation, Capital One, Tampa, Florida.

The investigation included locating possible microbial reservoirs, HVAC system evaluation, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Indoor Air Quality Investigation, AMS Engineering & Environmental, Punta Gorda, Florida

The investigation included bioaerosol sampling specifically for Nocardia bacteria, locating possible microbial reservoirs, HVAC system evaluation, investigated sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Air Quality Investigation with regard to Odor Complaints resulting from Stagnant Fire Sprinkler System Water , Voice Stream, Tampa, Florida

Determined causal factors with regard to health complaints in the offices of Voice Stream. Previously, the fire sprinkler system was drained in an adjacent construction area. It was reported that a return air vent became uncovered during the draining of the sprinkler system and that occupants in various offices complained of foul odors. Eight employees were taken to the hospital, seven were released and one stayed for several days complaining of respiratory problems. Based on observations, it was determined that the odors emanating from the drained water traveled through the return airside of the HVAC unit and into the supply side. These odors were delivered from supply vents to affected occupants.

Indoor Air Quality Investigation, Ft. Meyers Fire Station Number 3, Fort Meyers, Florida

The purpose of the investigation was to determine factors or contributing factors that could cause indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, HVAC system evaluation, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Indoor Air Quality Investigation, Rescare, Tampa, Florida

The purpose of the investigation was to determine causal factors for reported allergic symptoms and other contributing factors that could cause indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, HVAC system evaluation, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Source Determination of Odors, Shapes Fitness Center, Largo, Florida

The purpose of the investigation was to determine factors or contributing factors that could cause odor and indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, HVAC system evaluation, entrainment of outdoor air sources and other contributing factors. The spa contains an exercise area, modular offices, locker room and a back pool / whirlpool area.

Indoor Air Quality Investigation, Shorecrest Preparatory School, St. Petersburg, Florida

Several teachers complained of mildew and other various odors inside these classrooms. Conducted a comprehensive investigation of the building using well established ASHRAE, OSHA and EPA guidelines and protocols. The purpose of the investigation was to determine factors or contributing factors that could cause indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, HVAC system evaluation, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Determination of Indoor Air Quality Status, Tampa International Airport, Tampa, Florida

Conducted a comprehensive investigation of the building using well established ASHRAE, OSHA and EPA guidelines and protocols. The purpose of the investigation was to determine factors or contributing factors that could cause indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, HVAC system evaluation, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Indoor Air Quality Investigation, Health Complaints, Toyota Autoway

conducted a comprehensive investigation of the building using well established ASHRAE, OSHA and EPA guidelines and protocols. The purpose of the investigation was to determine factors or contributing factors that could cause indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, HVAC system evaluation, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Odor Investigation, Winter Haven Hospital, Winter Haven, Florida

Interviews with employees indicated the presence of foul odors. These odors were reported as “sewage, kerosene, musty and dead animal”. A comprehensive investigation of the building was conducted using well-established ASHRAE, OSHA and EPA guidelines and protocols. The purpose of the investigation was to determine factors or contributing factors that could cause indoor air quality complaints upon occupancy. The investigation included locating possible microbial reservoirs, sources of contamination and adequacy of dilution ventilation as contributing factors to poor indoor air quality.

Office Ventilation Assessment, AT&T Paradyne, Largo, Florida

Contracted by AT&T Paradyne to inspect and evaluate general dilution ventilation in the office areas with regard to indoor air quality and current guidelines. Also, included in the scope of work: inspection and evaluation of the general dilution ventilation and local exhaust systems in the assembly area (building G) with respect to worker comfort and health.

Allergen testing: Private Residence, Tampa, Florida.

Dust samples were collected from surfaces inside a home and tested for dog, cat, cockroach and insect part allergens. Based on the results, a cause-effect relationship was established and various remedies were recommended.

Indoor Air Quality Investigation: Research Laboratory, Hospital, Tampa, Florida.

Conducted the investigation in general accordance with NIOSH's Guidance for Indoor Air Quality Investigations. A building characterization checklist and questionnaires were utilized for the evaluation. Test methods included carbon dioxide, psychometric readings and observations.

Indoor Air Quality Investigation: Basement Offices, Music Hall, Clearwater, Florida.

Conducted an investigation in accordance with the latest techniques available. Work included a building characterization, interviews, carbon dioxide testing, microbial testing, observations, and recommendations.

Indoor Air Quality Investigation: Manufacturing Plant, Sarasota, Florida.

Performed an IAQ investigation of the office area. Determined total and respirable dust on workers using pre-tared open-faced cassettes (total dust) and SKC cyclone attachments (respirable dust).

Indoor Air Quality Investigation and Microbial Sampling: Publication Company, Clearwater, Florida.

Microbial Sampling of the ventilation system revealed fungi typical of paper products. Research indicated that this particular type of fungi may be responsible for respiratory ailments.

Indoor Air Quality Investigation: Office Building, Medical Center, Orlando, Florida.

Conducted the investigation in general accordance with NIOSH's Guidance for Indoor Air Quality Investigations. A building characterization checklist and questionnaires were utilized for the evaluation. Test methods included carbon dioxide, psychometric readings, and observations.

Indoor Air Quality Investigation: High Rise Office Building, Jacksonville, Florida.

Conducted an investigation in accordance with the latest techniques available. Work included a building characterization, interviews, carbon dioxide testing, microbial testing, observations, and recommendations.

Asbestos Consulting Projects

Asbestos Air Monitoring and Project Supervision: Windjammer Club, Guantanamo Bay Naval Base, Cuba.

Performed area and personnel 8-hour TWA sampling in order to determine airborne exposures of asbestos fibers before, during and after abatement. Ensured contractor regulatory compliance and adherence to specifications.

Asbestos Worker Training, Project Design, Air Monitoring and Project Supervision, Asbestos Boiler Insulation Removal: Lajes Air Field, U.S. Air Force, Terciera, Portugal.

With the aid of an interpreter, trained Portuguese workers in the safe practices and procedures regarding asbestos abatement. Work included air monitoring, project supervision, and ensuring compliance with regulations and specifications.

Project Design and Air Monitoring, Asbestos Cable Insulation Removal: Manholes, Clearwater, Florida.

Designed trailer mounted decontamination systems for the placement over manholes during cable removal. Work included supervision and air monitoring.

Inspection of Asbestos Activities: Power Generation Plant, Florida.

Responsible for inspecting and evaluating the work performance of five asbestos abatement contractors. Work performance was evaluated in terms of compliance with federal, state, and local regulations. Reported to the plant's Senior Industrial Hygienist.

Asbestos Worker Training, Project Design, Air Monitoring and Project Supervision: Guantanamo Bay Naval Base, Cuba.

Trained Thai, Philippino, and Jamaican workers regarding the proper techniques to safely remove asbestos.

Expert Witness: Asbestos Non-Disclosure Case, Clearwater, Florida.

Provided expert testimony regarding the implications of asbestos inside a private residence.

Asbestos Survey: Large Department Store, Pinellas Park, Florida.

Conducted a survey inside of an 85,000 square foot building for a renovation project. All materials were documented in a chain of custody sheet and sent to a NVLAP qualified laboratory.

Lead Consulting Projects Lead Abatement Project Design

Air Monitoring and Project Supervision: Patrick AFB, Florida.

Prepared a lead abatement plan based on regulations and military specifications, trained workers and conducted area and personnel sampling.

Certified Industrial Hygiene Services for a Lead Removal Project: HUD Housing Project, Tampa, Florida.

Assisted in the design of the project, abatement plan, hazardous waste activities and statistical sampling protocol. The two-year long project included site visitation every month to ensure compliance with regulations and specifications. Also provided lead abatement worker training.

Methylene Chloride Exposure Determination, Lead Abatement Removal Project: Sarasota, Florida.

Assessed worker exposure to MeCl₂ during a newly patented process for the removal of lead based paint on large surface areas. As it turned out, the process was not approved based on exposures.

Overseas Business Development (Pollution Control)

U.S. Department of Commerce Match Makers Conference Participant: London, England.

Met with pre-arranged prospective clients regarding the export of American pollution control equipment.

Taiwan, Singapore, Hong Kong and Bangkok.

Met with prospective customers regarding the sale of professional services and pollution control equipment. Visited federal and local regulatory agencies to determine current compliance and enforcement systems.

Employment History

- 1987 – Present:** **Silver Wolf Consulting and Engineering, Inc.**
Provide industrial hygiene services, asbestos consulting, environmental services and remediation.
- 1986-1987** **Industrial Hygienist, Quiltec, Inc., Tampa, FL.** Conducted worker exposure monitoring, community noise assessments, and industrial hygiene evaluations for military, federal, industrial, private and commercial clients.
- 1985-1986** **Corporate Industrial Hygienist, General Dynamics' Land Systems Division, Warren, MI.**
Researched chemical, physical and toxicological data for the creation of customized material safety data sheets. Created in-house occupational noise and respiratory protection safety manuals for company wide distribution. Trained employees on the safe handling of chemical compounds, solvents and welding materials per the Federal Hazard Communication Standard.
- 1983-1985** **Graduate Assistant, Wayne State University, Detroit, MI.**
In charge of laboratory sessions, the preparation of quizzes, and field work.
- 1982-1983** **Industrial Hygiene Chemist, Clayton Environmental Consultants, Inc., Southfield, MI.**
Demonstrated proficiency in analytical procedures that included gas chromatography, atomic absorption spectrophotometry, color spectrophotometry, spectrofluorimetry, ion selective electrode, pH, titrations, and gravimetric. Prepared calibration curves, correlation coefficients, and limit of detection for each analysis.

Key Accomplishments

- ❖ Founder of Silver Star Environmental Consultants (1987), now Silver Wolf Consulting and Engineering, Inc. specializing in industrial hygiene investigations and environmental remediation.
- ❖ Founder of CIH Equipment Company (1993) – calibration, repair and rental of environmental test equipment.
- ❖ Development of calibration laboratories – successfully researched and developed methodologies, purchased equipment and created procedures that followed ANSI standards, ASTM methods, and traceable to NIST Standards.
- ❖ Patent on Surface Sampler – created a surface sampler to uniformly collect contamination on media. This device is an improvement over OSHA and NIOSH methods that lack uniform coverage and pressure during collection.

Professional Publications and Reports

- ❖ “Occupational Exposure to Ultrafine Particles and Polycyclic Aromatic Hydrocarbons from Candle Emissions” Dissertation, University of South Florida (2005).
- ❖ The Sago Mine Disaster and MSHA. Florida AIHA Newsletter (January 2006).
- ❖ Calibration of Mass Concentration Meters. Florida AIHA Newsletter (January 2006).
- ❖ Calibration of Air Sampling and Flow Devices. Florida AIHA Newsletter (September 2005)
- ❖ Indoor Air Quality in Automobiles. Florida AIHA Newsletter (June 2005).
- ❖ "Fervor Over Indoor Air Quality Has Led to Various Misconceptions About Investigations." Florida Specifier (June 1994)
- ❖ "Assessing Respirator Needs Marks First Step in Protecting Workers on the Job." Florida Specifier (July 1994)
- ❖ "Proper Equipment Usage Helps Employees Get the Most Protection from Respirators." Florida Specifier (August 1994)
- ❖ "Public Often Lacks Critical Information to Assess Dangers of Toxic Releases." Florida Specifier (October 1994)

Presentations – Contributions to Conferences, Seminars and Symposia

“Automatic Surface Sampler”. Presentation, Florida Industrial Hygiene Association, Jacksonville, Florida (2004).

“Occupational Exposure to Ultrafine Particles and Polycyclic Aromatic Hydrocarbons from Candle Emissions” Poster, Society of Toxicology, San Francisco, California (2002)

Availability

Available for occupational safety and health consultations, indoor air quality investigations, asbestos surveys, presentations and qualified expert witness case assignments.