RHP RISK MANAGEMENT
Consulting Health Scientists

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SUITE 320
CHICAGO, IL 60631

December 21, 2018

City of Evanston
Office of Sustainability
Lorraine H. Morton Civic Center
2100 Ridge Ave.
Evanston, IL 60201

Re: **Environmental Monitoring Study – Waste Transfer Station**
RFP Number: 18-57

RHP Risk Management Inc. (RHP) and the University of Illinois at Chicago School of Public Health appreciate the opportunity to provide this joint proposal for completion of an environmental study to evaluate the presence of environmental contaminants[1] in and around the Church St. Waste Transfer Station. [2]

We understand that the City of Evanston is seeking qualified firms to perform, design, and implement a community-driven environmental monitoring study centered around the Advanced Disposal (ADSW) Church St. Waste Transfer Station located at 1711 Church St. in Evanston, IL. We understand that the waste transfer station currently accepts municipal solid waste and construction/demolition debris from hauling companies with unscheduled drop-off times. The waste, once dropped-off, is aggregated onsite and hauled off-site to be processed or landfilled.

We have reviewed the community feedback captured in the Evanston Waste Transfer Station Budget Survey conducted in August 2016 and understand that the community-driven nature of this project and desire to better understand the operational impacts of the waste transfer station. We also understand that there will be a high-level of community participation throughout the study which will consist of in-person meetings, consultations, and presentations to community organizations, the City Council, and its Committees.

Prior to submission of this proposal, we have carefully examined the contract documents (RFP 18-57 for Environmental Monitoring Study - Waste Transfer Station dated November 8, 2018 and RFP 18-57 for Environmental Monitoring Study - Waste Transfer Station Addendum No. 1 dated

[1] Environmental contaminants will be defined as measurable gases, metals, particulate matter, chemicals and liquids that are known to adversely impact human and environmental health.
[2] Waste Transfer Station: the facility located at 1711 Church St., Evanston, IL 60201, operated by Advanced Disposal (ADSW).

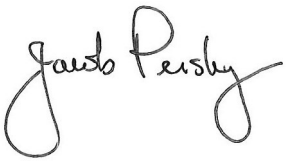
December 5, 2018), project scope and work tasks to be accomplished, specifications, submittal requirements, insurance requirements, and required documentation.

RHP is a niche environmental consulting firm of approximately 20 scientists representing various fields of practice including environmental engineering, industrial hygiene, exposure science, and human health risk assessment. We are a local firm headquartered in Chicago and situated approximately 20 minutes away from Evanston. RHP has prepared this proposal in partnership with Dr. Serap Erdal, Ph.D. from the University of Illinois-Chicago who will serve as a Senior Advisor for the duration of the contract. Her role will involve project oversight, data review, results interpretation, and engagement with the community and City at project meetings. RHP and Dr. Erdal have established a Memorandum of Understanding (MOU) that should RHP be awarded the project, a contract between RHP and the University will be executed so that all work conducted by Dr. Erdal will be performed in her capacity as an Associate Professor of the UIC School of Public Health.

We present the following proposed scope of work for a 6-month study to deploy and maintain an air quality monitoring network around the Target Area[3], costs associated with the study set-up and ongoing monitoring, equipment deployment and maintenance plan, and an alternate contracted cost to conduct a 30-day traffic evaluation.

Should you have any questions, please contact me at 773-867-6001 or by e-mail at jpersky@rhprisk.com.

Sincerely,



Jacob Persky, MPH, CIH
Principal and Co-founder
Direct Dial: 773.867.6001
Email: jpersky@rhprisk.com

Enclosure

[3] Target Area: The area from Dodge Ave. to Ashland Ave. and Grove St. to Emerson Ave.

Bid Submittal

City of Evanston

RFP Number 18-57

Environmental Monitoring Study

Waste Transfer Station

Prepared for:
The City of Evanston
Office of Sustainability
Purchasing Office
Lorraine H. Morton Civic Center
2100 Ridge Ave.
Evanston, IL 60201

Prepared by:
RHP Risk Management Inc.
8745 W. Higgins Rd., Suite 320
Chicago, Illinois

Proposal Date:
December 21, 2018

Proposed RHP project team (left to right): Luke Nienhaus, Jacob Persky, MPH, CIH, Dr. Frank Pagone, PhD., Jason Lang, CIH, CSP
Not pictured: Dr. Serap Erdal, Associate Professor of Environmental and Occupational Health Sciences, UIC School of Public Health

Contents

Appendices

1 Environmental Study

RHP proposes to conduct a 6-month study by deploying and maintaining an air quality monitoring network within and surrounding the Target Area.

Equipment

The air sampling equipment that will be used at each monitoring station will include two standalone direct-read data-logging instruments: 1) an AQMesh monitor, and 2) a MultiRAE Pro monitor. A description of the sampling equipment is provided below. RHP will purchase the AQMesh Air Quality Monitors from Ambilabs (Warren, RI) who is the sole U.S. distributer of products manufactured by AQMesh Environmental Instruments Ltd. which is a UK-based company. [4] Lead-time for delivery is approximately 8 weeks from the date of order placement. RHP will also purchase the MultiRAE Pro wireless monitors from AFC International Inc.,[5] a Women's Business Enterprise (WBE), located in DeMotte, IN. Both instruments will be powered by an off-grid solar-panel power station purchased from WindSoleil,[6] an Evanston Based Enterprise, located in Evanston, IL. The combined costs for equipment purchases and services from both AFC and WindSoleil represents 26% of the proposed project budget and meets M/W/EBE targets for the project.

AQMesh Air Quality Monitor [7]

The AQMesh Air Quality Monitor (pod) is a small sensor air quality monitor for measuring indoor and outdoor air quality. AQMesh pods measure pollutants in ambient air using the small sensor technology combined with data processing from extensive global comparisons with reference data. They are built to an exceptionally high quality to withstand harsh environments and challenging standards. Performance comparison trials have been conducted resulting in a close relationship between reference stations and the AQMesh Air Quality Monitor.[8,9] This monitor will be configured to measure and data-log parameters including: NO, NO2, ozone, temperature, atmospheric pressure, relative humidity, particulates, PM2.5, PM10, CO, and noise. Select monitors will additionally be configured with wind-speed and wind-direction recording capabilities.

[4] http://www.ambilabs.com/
[5] https://afcintl.com/
[6] https://www.windsoleil.com/#windsoleil-home
[7] https://www.aqmesh.com/
[8] https://www.aqmesh.com/performance/co-location-comparison-trials/
[9] https://www.atmos-meas-tech.net/9/5281/2016/amt-9-5281-2016-discussion.html

MultiRAE Pro (Model PGM-6248) [10]

MultiRAE Pro is an industry-leading wireless device for monitoring chemical hazards and is the only multi-threat direct-read monitor with parts-per-billion precision. The MultiRAE Pro is an industry leading wireless devise that is compliant with MIL-STD-810G and 461F performance standards.[11] This monitor will be configured to measure and data-log parameters including: H2S, CH4S, CH20, and organic solvents (TVOCs) using a ppb-PID.

Deployment and Maintenance Plan

Each station will be comprised of one AQMesh Air Quality Monitor, one MultiRAE Pro (Model PGM-6248), one 100W solar panel with 12V 100AMP battery, and one weather-proof enclosure to protect the MultiRAE Pro, battery, and voltage controller. All equipment will be pole mounted to utility or light poles and all mounting hardware is included in the proposed cost of equipment. Equipment will also be securely locked to prevent theft. See Figure 1 below for a design mockup.

Utilizing the preliminary recommendations by the Thriving Earth Exchange (TEE) and to fulfill the overall goal of the project without redundant data collection, we concluded that the monitoring network should consist of seven (7) stations: one (1) station will be placed at the North, East, West and South boundaries of facility, one (1) station will be placed at Evanston Township High School (ETHS), one (1) station will be placed at Mason Park, and one (1) station will be placed at a control location with similar traffic outside of the Target Area. The stations will be installed by RHP using a bucket-truck and mounted between 12-15 feet above the ground. The projected sampling locations are displayed in Figure 2.

Fig. 1 – Mockup of monitoring station with pole-mounted equipment. 100W solar panel (top), AQmesh (middle), and environmental enclosure containing battery, voltage controller, and MultiRAE Pro module with air-inlet probe extending through case (bottom).

[10] https://www.raesystems.com/products/multirae-pro
[11] https://www.raesystems.com/sites/default/files/content/resources/Datasheet_MultiRAE%20Pro_DS-1068-11_US-EN_LR.pdf

We believe this study design provides a balanced approach between data quality and project cost considering the pilot-study objectives.

Fig. 2: Projected sampling locations for the duration of the study period.

Proposed Timeline

RHP estimates the proposed timeline below based on available information and understands that this may be subject to change.

Contract Effective: January 15, 2019

Equipment Received: March 12, 2019

Equipment prep period to ensure equipment is fully functional and calibrated instruments provide similar readouts when co-located:
March 18, 2019 – March 29, 2019 (7 days / 1-week)

Time required to deploy all equipment: March 25, 2019 – March 29, 2019 (5 days / 1-week)

Date system fully online and data collection begins: April 1, 2019

Period of data collection: April 1, 2019 – October 1, 2019 (6-months)

Data collection end date: October 1, 2019

Study end date: October 21, 2019

Maintenance

Equipment is not scheduled to be replaced within the duration of the planned 6-month study unless an instrument malfunction were to occur. All equipment will be purchased new and manufacturer-calibrated prior to delivery to RHP. Manufacturer issued calibration certificates will be provided in study documentation.

RHP will follow manufacturer recommended maintenance frequency guidelines for replacement of consumables such as toxic gas-sensors, air-inlet filters, and UV-lamp / PID sensor cleaning for the duration of the study. All toxic gas sensors have manufacturer warranted life-spans which exceed the anticipated study duration of 6 months (ranging 1-4 years depending upon sensor).

The MultiRae Pro has an air-inlet particulate filter which RHP will replace monthly as part of routine preventative maintenance. On a weekly basis, RHP will following manufacturer instructions to check illumination on the 10.6eV UV-lamp which is the operational component of the PID, and once monthly clean the sensor electrode panel in a solution of isopropanol or methanol lamp cleaner solution. The MultiRAE PID sensor will be recalibrated once per month following cleaning of the sensor module using a field-portable bottle of compressed isobutylene gas which has a traceable Certificate of Analysis. Other toxic-gas sensors on the MultiRAE will be bump-tested monthly using an AutoRAE2 controller and cradle which provides automated capabilities for bump-test and sensor recalibration (if determined necessary) using field-portable bottles of calibration gases.

The gas sensors fitted into the AQMesh pods are calibrated during the manufacturing process and, as stated in the AQMesh Operating Manual, do not exhibit drift normally associated with other types of gas sensor.[12] Data will be monitored daily to ensure the equipment is working properly and the stations will, at a minimum, be routinely checked one (1) day each week. Routine maintenance is not anticipated for this instrument during the 6-month study period as the manufacture recommends service annually and replacement of sensors every two (2) years.

Routine maintenance for the solar-power station will include a once-weekly dusting of the panel-face and voltage check on the battery to ensure nominal voltage conditions. The solar panel and equipment have a 2 – 3 year warranty, depending on the part.

[12] https://www.aqmesh.com/wp-content/uploads/2016/07/AQMesh-operating-manual.pdf

Data Collected by Equipment

The AQMesh Air Quality Monitor and MultiRAE Pro (Model PGM-6248) at each station will be equipped, at a minimum, with sensors to monitor for the following parameters:

AQMesh Air Quality Monitor [13]			
Parameter	**Range**	**Units**	**Limit of Detection (LOD)**
Nitric oxide (NO)	0 to 4000 ppb	ppb or µg/m^3	< 5 ppb
Nitrogen dioxide (NO_2)	0 to 4000 ppb	ppb or µg/m^3	< 10 ppb
Ozone	0 to 1800 ppb	ppb or µg/m^3	< 5 ppb
Enclosure Temperature	-20 to 100 °C	°C	0.1 °C
Atmospheric Pressure	500 – 1500 mb	mb	1mb
Relative Humidity	0-100%RH	%RH	1%RH
Particle Count	0.3 to 30 µg/m^3	µg/m^3	0.3 to 30 µm
PM2.5	0 to 500 µg/m^3	µg/m^3	0 to 500 µg/m^3
PM10	0 to 1000 µg/m^3	µg/m^3	0 to 1000 µg/m^3
Carbon Monoxide (CO)	0 to 6000 ppb	ppb or µg/m^3	< 5 ppb
Sulfur dioxide (SO_2)	0 to 10000 ppb	ppb or µg/m^3	< 10 ppb
Noise			
Frequency Response	**Accuracy**	**Level**	**Weighting**
20Hz – 20kHz	± 1dB	35dB SPL to 100dB SPL	Unweighted
MultiRAE Pro (Model PGM-6248) [14]			
Parameter	**Range**	**Units**	**Limit of Detection (LOD)**
Hydrogen sulfide (H_2S)	0 to 100 ppm	ppm	100 ppb *
Methyl mercaptan (CH_4S)	0 to 10 ppm	ppm	100 ppb *
Formaldehyde (CH_2O)	0 to 10 ppm	ppm	50 ppb *
Organic Solvents (VOC)	0 to 2000 ppb	ppb	10 ppb

ppb = parts per billion, µg/m^3 = microgram per meters cubed, ppm = parts per million, PM = particulate matter, dB = decibels, SPL = sound pressure level, °C = degrees Celsius, RH = relative humidity, mb = millibars, Hz = hertz, kHz = kilohertz

* For this parameter, the LOD values for sensors in this instrument are above the 10 ppb LOD requested within RFP.

[13] https://www.aqmesh.com/wp-content/uploads/2018/07/AQMesh-technical-specification-V5.1-November-2018.pdf
[14] https://www.raesystems.com/sites/default/files/content/resources/Datasheet_MultiRAE%20Pro_DS-1068-11_US-EN_LR.pdf

Two (2) AQMesh Air Quality Monitors, one (1) located North of the waste transfer station and one (1) located at the Mason Park Sampling Location, will also be equipped with sensors to measure metrological parameters including wind direction and wind speed. An additional source of weather information is publicly available for nearby Palwaukee Airport through the Iowa State University Iowa Environmental Mesonet and will be relied upon for precipitation data.[15,16]

Data Management and Analysis

Measurements for all parameters will be recorded at data-point intervals no greater than 1-minute apart. All data recorded by the AQMesh Air Quality Monitors will be wirelessly synchronized to the Cloud using internal cellular data transmission capabilities. All data recorded by the MultiRae Pro monitors will be stored on internal instrument memory and manually downloaded by RHP during weekly instrument checks. All downloaded data will be uploaded on a weekly basis to a password protected remote server provided by the City of Evanston. All other data storage will also be password protected.

Following the completion of analysis and within thirty (30) days of the data collection end date, RPH will submit one (1) report which will include:

- Description of the equipment utilized and the data collection methodology and procedures as well as data analysis methodology.
- Thorough analysis of all data collected during the study period.
- Conclusions and findings reached based on data collected.
- Standards for each contaminant.
- Comprehensive list of contaminants presents at each monitoring site with contaminant levels and standard intervals.
- Description of weather and activity conditions and their correlative or causal impact on the presence of each monitored contaminant.
- Map depicting the relative presence of monitored contaminants based on proximity to the Waste Transfer Station.
- Recommended next steps (continue data collection, revise study, halt data collection)
- Self-evaluation of the study and the equipment utilized.

Data Quality Considerations

Results of the analysis will be used as a screening tool to quantitatively compare the magnitude of difference in measurement values between each of the 7 monitoring sites, and also qualitatively compare measured data to current regulatory standards such as CFR Part 50 –

[15] http://mesonet.agron.iastate.edu/sites/windrose.phtml?station=PWK&network=IL_ASOS
[16] https://mesonet.agron.iastate.edu/sites/hist.phtml?station=PWK&network=IL_ASOS

National Air Ambient Air Quality Standards.[17] It is important to note that the instrumentation and methods proposed for this pilot study employ cost-effective sensor technologies which provide insight at a fraction of the cost as-compared to Federal Reference Methods (FRM) and Federal Equivalency Methods (FEM) for ambient air quality monitoring. Accordingly, some uncertainty will be present in any direct comparisons of the data to regulatory limits which are based upon data collected by FRM or FEM approaches. We believe that considering the pilot-study nature of the investigation, this represents an appropriate approach for establishing an air-quality monitoring network in a cost-effective manner. The results will also inform potential future analyses in any follow-on study which may appropriately consider use of FRM/FEM monitoring methods for parameters that are identified by the pilot-study to be of significant interest. Further, the instruments used in this study may at a later date be "scaled" to FRM/FEM methods by co-locating instrument(s) with monitoring equipment at a nearby EPA air monitoring station. Dr. Erdal has past experience with successful negotiations for co-located placement of air monitoring equipment at EPA sampling stations. Such is not included in the cost of this proposal but is an option for future consideration that would serve to "qualify" the data following the application of scaling factors.

Meetings and Reports

Throughout the duration of the one (1) year agreement, RHP will attend and cohost four (4) community engagement events. RHP understands that one (1) event will take place two (2) weeks prior to the equipment deployment date, one (1) will take place during the data collection phase and one (1) within thirty (30) days of release of the final study report.

To further community engagement in the project, RHP also wishes to propose a "branding" campaign to drive interest in the project. This will be achieved by prominently marking the pole-mounted monitoring equipment with a graphic reading: "EvanstonAir.info" and maintaining a website focused on the study. A social media campaign using the tag "#EvanstonAir" could also be considered to further increase community engagement and drive visitors to the project website. We encourage the City to visit www.evanstonair.info and view a mockup that RHP has created with suggested content, such as: 1) information about the study, 2) a community calendar placeholder to announce dates and times for the four planned project meetings, 3) if desired, a location to publish and share study data, findings, and reports, and 4) a FAQ section. Figure 3 presents a screenshot of the draft design.

[17] https://www.epa.gov/criteria-air-pollutants/naaqs-table

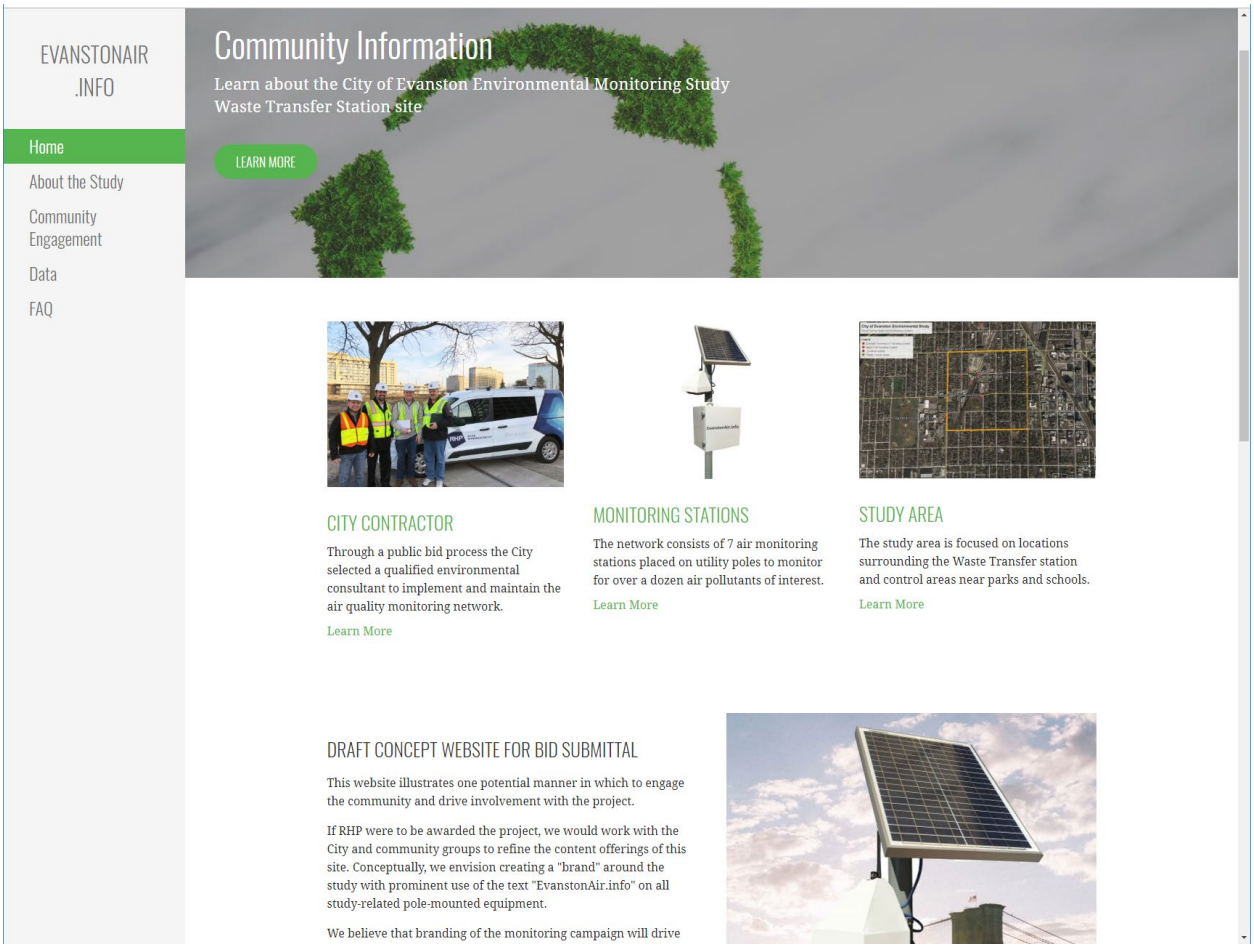


Figure 3 – Screenshot of homepage for www.EvanstonAir.info

Traffic Evaluation – Proposal Alternate 1

To conduct a traffic evaluation, if desired, RHP would partner with Traffic Impact Group, LLC located on 1431 Opus Place, Suite 110 in Downers Grove, IL. Traffic Impact Group, LLC would conduct a 30-day traffic study concurrent with one representative month of the environmental study. Tasks include placing, maintaining, and removing the battery-operated road tubes at the desired locations. The results would include speed, class of vehicle, and volume data, by direction, for each hour and used to quantify and categorize how traffic activity in the area impacts the presence of measured environmental contaminants collected through the environmental study.

2 Qualifications and Experiences

Listed below are previous and current contracts similar in scope, size, or discipline performed or undertaken within the past five years by RHP and Serap Erdal, PhD, from the University of Illinois at Chicago.

Community Air Monitoring Surrounding Industrial Waste Processing Plant
St. Francis, WI – November 2017

Jacob Persky, MPH, CIH & Frank Pagone, Ph.D.
RHP Risk Management Inc., Chicago, IL, USA

The city of St. Francis is a suburb of Milwaukee with a mixture of industrial sites and residential neighborhoods. Since the 1970's, a "drum and barrel reconditioning" industrial facility has operated from a location that is surrounded by residential properties on 3 of 4 sides. The facility receives 55-gallon drums that are "mostly empty" but generates a variety of waste from residual chemicals that they clean from the drums and barrels. This waste is treated by various methods, some of which involve burning or discharge to atmosphere through a scrubber. The efficacy of the scrubber, and frequent detection of solvent chemical odors in the residential areas surrounding the facility, has generated resident concern for many years. An investigative reporter for the Milwaukee Journal Sentinel received grant funding from McGraw Center for Business Journalism to hire RHP Risk Management and perform community air monitoring for parameters of interest including: VOC's, inorganic acids, airborne metals, and Polycyclic Aromatic Hydrocarbons (PAHs) at 4 residential receptor sites surrounding the facility. RHP placed and maintained the network of monitors for the week of Monday 11/13/2017 to Saturday 11/18/2017. Real-time instruments were also used to collect data on VOCs and Particulate Matter (PM).

Samples were collected at 4 residential receptor sites in cardinal directions around the facility to monitor upwind, downwind, and cross-wind conditions to help inform source/origin of measurement parameters, as well as concentration as a function of distance from the facility. Video exposure monitoring was performed to correlate visible emissions from the scrubber stack to measured concentrations of airborne pollutants.

Results were published in the Milwaukee Journal Sentinel on December 19, 2017. https://projects.jsonline.com/news/2017/12/19/noxious-neighbor.html

John Diedrich
Milwaukee Journal Sentinel
333 W. State St.

Milwaukee, WI 53203
Phone: 1-414-224-2408
jdiedrich@journalsentinel.com

Neighborhood-level Stationary Air Monitoring
Chicago, IL – October – November 2016

Serap Erdal, Ph.D. & Frank Pagone, M.Sc.
University of Illinois at Chicago, School of Public Health, Chicago, IL, USA

Fixed-site (stationary) air monitoring was conducted at three (3) locations surrounding an open-air scrap metal transfer station for particulate matter with aerodynamic diameter less than or equal to 2.5 µm (PM.25) following the United States Environmental Protection Agency's (USEPA) sampling schedule for PM2.5 (once in every three days) in October – November 2016. The concentrations measured at each neighborhood location were compared to concentrations measured by the USEPA Springfield Pump Station and USEPA Mayfair Pump Station.

Research was addressed in a Chicago Tribune article dated December 28, 2017.
https://www.chicagotribune.com/news/local/breaking/ct-met-clybourn-corridor-scrap-yard-20171228-story.html

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Baker Companies
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Sustainable Environmental Health Infrastructure and Cumulative Ranking Development for South Cook County with Community Stakeholder Participation
Chicago, IL – September 2014 – 2016

Serap Erdal, Ph.D. & Frank Pagone, M.Sc.
University of Illinois at Chicago, School of Public Health, Chicago, IL, USA

US Dept of Health & Human Services (Centers for Disease Control & Prevention, Agency for Toxic Substances and Disease Registry) Grant

We collaborated with five urban/suburban community partners in Southeast Chicago and South Cook County (i.e., Southeast Environmental Task Force (SETF) in Chicago; Developing

Communities Project (DCP) in Roseland, IL; Human Action Coalition Organization (HACO) in Harvey, IL; Blue Island Community Health Coalition (BICHC) in Blue Island, IL; and South Suburban Mayors and Managers Association (SSMMA)) to create a survey-based model for sustainable environmental health infrastructure and cumulative ranking development with community stakeholder participation, which included threats to neighborhoods with high burden of land pollution.

Our work for this community-based project with its acronym "SUCCEED", i.e., South Urban Cook County Environmental Equity Development, consisted of: 1) development of indicators for community environmental, neighborhood and health threats/concerns; 2) creation of a risk perception survey in collaboration with our community partners; 3) preparation of an accompanying virtual library that allowed visualization of each threat as an addendum to the survey in order to communicate threats to community residents effectively; 4) development of criteria and a script for our community meetings to ensure successful outcome and consistency from one community meeting to next; 5) training of community organization staff by the academic team in organizing and running community meetings to collect quality environmental, neighborhood, and health threat/risk perception data; 6) collection of survey data at community meetings; 7) analysis of data using statistical and data visualization tools; 8) sharing of our results with partner communities and receiving their input; and 9) engaging in outreach and training to disseminate grassroots level information on environmental, neighborhood and health concerns of communities with internal and external stakeholders for informed decision-making on neighborhood recovery.

Risk perception results and additional environmental data analysis was published in "Environmental Justice in Cook County, IL: Air and Land Pollution" by Frank Pagone, M.Sc.
https://indigo.uic.edu/handle/10027/22204

Laurel Berman, PhD
LABerman@cdc.gov
National Brownfields Coordinator
Agency for Toxic Substances and Disease Registry
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77 W. Jackson Blvd. Ste. 433, ATSD-4J
Chicago, IL 60604
312-886-7476

US EPA: Camp Fire Cleanup – Community and Worker Air Monitoring during Hazardous Material Cleanup Related to Largest Wildfire in California History
Paradise, CA: November 2018 – Ongoing (estimated completion March 2019)

Ted Ice
RHP Risk Management Inc., Berkeley, CA, USA

RHP Risk Management is currently working as a subcontractor to EnviroNova LLC on behalf of Weston Solutions who is a prime contractor to the US EPA. RHP's office in Berkeley, California is performing air monitoring for hazardous air pollutants on 5 crews of workers cleaning up hazardous materials within fire debris under the direction of the US EPA.

Christa Khoury, Operations Manager
EnviroNova LLC
235 Montgomery Street, Suite 1105
San Francisco, CA 94104
Office 415-883-7575
Cell 650-333-7286
environova.com

Butte County, CA: Wall Fire Cleanup – Community air monitoring around Landfill during Offloading of Debris from 2017 Wall Fire wildfire in Butte County, CA. August – November 2017

Jim Harms & Randy McClure, CSP
RHP Risk Management Inc., Berkeley, CA, USA

RHP Risk Management contracted with the County of Butte public works department to provide industrial hygiene exposure monitoring and air sampling data for hazardous air pollutants during fire debris transfer and offloading at the municipal operated Neal Landfill following a wildfire event.

Bill Mannel
Butte County Public Works
#7 County Center Dr.
Oroville, CA 95965
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3 Managers and Professional Staff

RHP presents the following managers and professional staff who will be involved in this project including Jacob Persky, MPH, CIH and Frank Pagone, PhD. RHP will also provide additional field staff with at least a bachelor's degree in environmental sciences. Serap Erdal, PhD, from the University of Illinois at Chicago, will assist throughout the project as a Senior Advisor.

The names and a summary of abilities, qualifications and experiences are shown below. Current Resume/Curriculum Vitae (CV) documentation is provided in Appendix A.

Jacob Persky, MPH, CIH
Principal and Co-founder
RHP Risk Management Inc.
Chicago, IL

Jacob Persky has 20 years of experience as an industrial hygienist and environmental consultant. He has a broad-based knowledge of exposure assessment and exposure reconstruction principles, which he applies within the paradigm of risk analysis. Mr. Persky holds a Master of Public Health degree from Benedictine University and a B.S. degree in Bioengineering from University of Illinois. He is certified in the comprehensive practice of industrial hygiene as a Certified Industrial Hygienist (CIH) which is accredited by the American Board of Industrial Hygiene (ABIH).

Mr. Persky integrates current and evolving methodologies and tools into his practice, including mathematical modeling, Bayesian statistics and stochastic analysis to consider uncertainty in decision-making processes. He has consulted on high-stakes projects, which underpin the foundation of risk-based decisions made by multinational companies in the fields of semi-conductor manufacturing, automotive manufacturing, railroading, healthcare, facilities management and oil and gas, among others. His projects have taken him throughout the US and abroad, including Australia, Brazil, Bolivia, and Mexico.

Frank Pagone, Ph.D.
Senior Associate
RHP Risk Management Inc.
Chicago, IL

Frank Pagone has 6 years of environmental health and safety education and research. Dr. Pagone received his B.S. from Purdue University and both his M.S. in Public Health – Industrial Hygiene and Ph.D. in Public Health from the University of Illinois at Chicago (UIC). His graduate research focused on Human Health Risk Assessment and Geographic Information Systems (GIS), and he is certified in Geospatial Analysis and Visualization with a focus on GIS.

His research topics include environmental human health risk assessment including probabilistic risk assessment, exposure assessments and cancer risk analysis, and spatial statistics. Dr. Pagone has also consulted on data management and analysis including collection of population, health, employment, environmental risk/hazard, and housing data as well as taught a variety of topics including air and water quality and management, industrial hygiene, and statistics.

Jason Lang, CIH, CSP
Manager
RHP Risk Management Inc.
Chicago, IL

Jason Lang has worked in the field of EHS consulting as an industrial hygienist for 10 years. Mr. Lang is certified by the American Board of Industrial hygiene in the comprehensive practice of industrial hygiene. He was trained as an industrial hygienist at Purdue University.

In his previous career Mr. Lang worked in the construction industry as an electrician and carpenter. Through this experience he provides a unique perspective in worker risk-based behaviors, work practices, and specific product and equipment knowledge which has aided in the performance of exposure assessments, exposure reconstructions, statistical analyses, and exposure modeling.

Luke Nienhaus
Manager
RHP Risk Management Inc.
Chicago, IL

Luke Nienhaus has 10 years of environmental consulting experience, with special emphasis in indoor air quality, industrial hygiene, and regulatory compliance due diligence. He has extensive experience conducting large-scale site inspections, microbial investigations, water damage remediation oversight, and lead-based paint inspections and risk assessments in schools, offices, industrial facilities, government buildings, and residences. Mr. Nienhaus holds a B.S. degree in Environmental Science from Ball State University.

Serap Erdal, Ph.D.
Associate Professor
University of Illinois-Chicago
School of Public Health
Environmental and Occupational Health Sciences

Professor Erdal operates a research program in exposure and health risk assessment for environmental and occupational hazards. In addition, she has served as a scientific consultant to many fortune 500 companies and the U.S. Department of Defense and Energy. Her areas of expertise include: multi-media human exposure and risk assessment for cancer and non-cancer effects; health and safety evaluation of new chemicals or products; petroleum and alternative fuels; renewable energy sources; hazardous waste site multi-media (air, water, soil, sediment) investigation, remediation and risk management; Brownfields or Superfund site evaluation, redevelopment; sustainable (green) development; indoor and outdoor air pollution; aerosol science and technology, fine and nanoparticle exposure and risk assessment, nanotechnology health and safety evaluation, persistent organic chemicals (PCBs, PBDEs, Dioxins, Furans); lead other toxic metal exposure assessment and abatement; industrial hygiene; retrospective occupational exposure assessment; development of exposure assessment methodologies for epidemiological investigations; technical interpretation of environmental and occupational health and safety regulations (CAA, CWA, TSCA, CERCLA, OSHA); and regulatory science policy analysis.

4 Cost Information Sheet

Environmental Study

RHP's bid submission of $246,100 includes both the environmental study and equipment costs. The environmental study cost is separated below into three (3) lump sums: 1) the cost of study set up, 2) the ongoing cost of maintaining the deployed equipment, and 3) the cost of data management and analysis.

1. Study Set-up: $20,900
2. Ongoing Maintenance of Deployed Equipment: $66,400
3. Data Management and Analysis: $37,000

Total Environmental Study Cost (not including Equipment) = $124,300

Equipment Costs

Total Amortized Equipment Costs: $121,800

All equipment will be purchased new and owned by RHP, including monitors, calibration equipment and gases, solar panels, batteries, and environmental enclosures. RHP's capital expenditure for equipment purchases will be $152,250 of which 80% is amortized into this project, resulting in $121,800 of project budget allocated towards equipment costs. Unit pricing for equipment purchase and maintenance service / calibration items is as follows:

AQMesh Pods	MultiRae Pro Monitors	Solar Power Supply Unit
• $10,241 / unit • $210 / SIM data card per unit • $210 / cloud data access per unit • $4,900 / unit for weather sensor module • $150 / unit shipping from UK	• $5,819.14 / unit • $1,768.85 / AutoRae 2 controller • $1,482.40 / AutoRae2 Cradle • $229.50 / flow controller • $80/ cal-gas isobutylene • $85/ cal-gas H2S/N • $80/ cal-gas CO • $480/ cal-gas CH4S	• $220 / unit for 100W panel with controller • $365 / battery for 100Amp-hr deep cycle • $648 / unit for weatherproof NEMA-rated pole-mountable enclosure, mounting accessories, and cables.

Alternate 1 – Traffic Evaluation

If selected, RHP would partner with Traffic Impact Group, LLC located on 1431 Opus Place, Suite 110 in Downers Grove, IL to complete the traffic evaluation. Traffic Impact Group, LLC would perform the entirety of traffic evaluation tasks including placing, maintaining, and removing the battery-operated road tubes at the desired locations and downloading data from each site. The results would include speed, class of vehicle, and volume data, by direction, for each hour.

The cost estimate to conduct a 30-day Traffic Evaluation adjacent to the seven (7) sampling locations presented in Figure 2 would be $21,000 total ($3,000/location).

5 Contract

RHP has read the professional services agreement and would execute the agreement without exceptions. The signed professional service agreement acknowledgement page can be found in Appendix C.

6 Additional Submission Requirements

Please see the project below that was completed with a public agency and directly related to outdoor air quality monitoring.

Shared Air/Shared Action (SA2): Community Empowerment through Low-cost Air Pollution Monitoring
Chicago, IL and Manhattan, KS – May 2016 – April 2019

Investigators: Wendy Griswold (KSU, Single Inst. Lead PI); Co-PIs: Ronaldo Maghirang, Larry Erickson (KSU); Serap Erdal (UIC); Cheryl Johnson (PCR); Gail Merritt (AGSL); Margaret Renas (Delta); Peggy Salazar (SETF); Kim Wasserman (LVEJO); Brian Urbaszewski (RHA)

Institutions: Kansas State University (KSU), Manhattan, KS (Lead institution requesting funding), Alliance for a Greener South Loop (AGSL), Delta Institute (Delta), Little Village Environmental Justice Organization (LVEJO), People for Community Recovery (PCR), Respiratory Health Association (RHA), Southeast Environmental Task Force (SETF), University of Illinois-Chicago (UIC).

United States Environmental Protection Agency Grant
EPA Grant Number: R836182

This innovative research project engages 8 partners, 4 of which are local community organizations working to improve air quality for citizens of South Chicago. It is our hypothesis that people will become more engaged in and with their environment if they are provided with relevant scientific and technical tools, including low-cost portable sensors and appropriate technical assistance. To test this hypothesis, community collaboration in planning and conducting the research is a key element. The project objectives are to 1) investigate that community-led research results in improved understanding of the pollution concentrations and the development of sustainable community-specific strategies to effectively monitor pollutants, analyze and communicate results, 2) investigate cross-community coalition building, 3) Investigate the ability of the coalition to leverage resources to create future coordinated action plans to reduce exposure and mitigate health risks, and 4) evaluate and document the collaborative community-based research process utilized. Approach: The work will involve air pollution monitoring in four diverse communities in Chicago, using low-cost portable air pollution sensors. Using a fully integrated mixed-method design, qualitative and quantitative data will be collected to evaluate a research program in which community members in four distinctive communities (3 EJ, 1 non-EJ) operate low-cost air sensors to collaborate and develop a shared understanding of their exposure environment. Expected results include new knowledge about the use of low-cost air

sensors to address community-identified concerns and the impact of participatory research strategies on that process. Additional results include a lasting coalition of communities with an in-depth understanding of their shared environment and capacity to continue working towards improved air quality, as well as a community-based air monitoring program manual that other communities can use.

Following the community air pollution monitoring, the air monitoring sensors were positioned alongside USEPA FRM sampling equipment at an EPA Air Monitoring Station in Northbrook, IL to examine the relationship and compare the results of each method. The results of this analysis are still being analyzed.

Additional grant and project information as well as reference contact information can be found on the USEPA website at:
https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/10739

7 MWEBE Goals

RHP understands the City of Evanston's goal to provide contracting and subcontracting opportunities to Minority Business Enterprises, Women Business Enterprises, and Evanston Business Enterprises (M/W/EBE) and the specific project goal of 25% of the awarded contract be utilized by M/W/EBEs. RHP will meet this goal by purchasing MiniRAE real-time monitoring equipment from AFC International,[18] a certified WBENC Women's Business Enterprise, and utilizing WindSoleil,[19] an Evanston Based Enterprise, to provide solar panels and additional power components needed to supply continuous off-grid power to the monitoring equipment. The M/W/EBE participation compliance forms and documentation can be found in Appendix B.

[18] AFC International Inc.: AFC International, Inc., 715C SW Almond St, DeMotte, IN 46310, USA https://afcintl.com/
[19] WindSoleil: 1715 Emerson St, Evanston, IL 60201, USA https://www.windsoleil.com/#windsoleil-home

APPENDIX A

Managers and Professional Staff Resume/Curriculum Vitae (CV)

Jacob Persky, MPH, CIH | Principal
Chicago, Illinois
+1 773.867.6001 | jpersky@rhprisk.com

CURRICULUM VITAE SUMMARY – JULY 2018

Jacob Persky has 20 years of experience as an industrial hygienist and environmental consultant. He has a broad-based knowledge of exposure assessment and exposure reconstruction principles, which he applies within the paradigm of risk analysis. Mr. Persky strives to integrate evolving methods and tools of the profession into his work practices, such as the application of mathematical modeling, Bayesian statistics, and stochastic analysis to consider uncertainty in decision making processes with clients. Mr. Persky has consulted on high-stakes projects which underpin the foundation of risk-based decisions made by multinational companies in the fields of semi-conductor manufacturing, automotive manufacturing, railroading, healthcare, facilities management, oil & gas, and many others. His work has taken him to 28 states and internationally to Australia, Bolivia, Brazil, Mexico, and the UK. Mr. Persky is certified in the comprehensive practice of industrial hygiene (CIH) by the American Board of Industrial Hygiene (ABIH).

EDUCATION

2012 Master of Public Health, Benedictine University
2001 Bachelor of Science – Life Sciences: Bioengineering, University of Illinois at Champaign-Urbana

EXPERIENCE

July 2015 to Present – Principal and Cofounder, RHP Risk Management Inc., Chicago, IL

Project responsibilities include team leader and technical execution of industrial hygiene, indoor air quality, and safety and health projects for commercial, manufacturing and industrial clients. Provide senior project oversight and mentor junior staff. Managing scientist for RHP's Exposure Sciences Laboratory facility with responsibilities in designing and conducting exposure simulation, dose reconstruction, and product testing evaluations.

April 2008 to June 2015 – Senior Manager, ENVIRON International Corp. / Ramboll Environ US Corporation, Chicago, IL.

Responsible for project management and technical execution of industrial hygiene projects for commercial and industrial clients. Conduct exposure assessments for a wide variety of industries (e.g. railroad, automotive, foundry, oil & gas, chemical manufacturing, materials packaging). Conducted a variety of historical exposure reconstructions and risk assessments, including international projects in Australia, Brazil, and Mexico. Participated on a team that conducted an international exposure assessment and cancer risk analysis for semi-conductor manufacturing workforce in South Korea.

June 2004 to March 2008 – Project Manager, Environmental Consulting Group, Chicago, IL

Responsible for conducting indoor air quality testing, asbestos building material inspections, lead-based paint surveys, and microbial growth investigations at residential, commercial, and industrial sites. Managed technical field staff; responsible for proposal writing, project budgeting, project management, report writing, and profitability. Conceived and implemented successful residential sector marketing campaign.

February 2004 to April 2004 – Project Manager, Environmental Design International, Chicago, IL

Served as AHERA Management Planner of record for AHERA re-inspections at over 200 Chicago Public Schools; reviewed and updated asbestos management plans. Conducted asbestos condition assessments at over 50 schools.

December 2001 to February 2004 – Project Manager, Bain Environmental, Chicago, IL

Responsible for conducting asbestos building inspections, microbial growth investigations, and lead-based paint surveys for residential, commercial, and industrial sites.

June to August 1997, 1998, 1999, 2000, 2001 – Asbestos Project Manager (Various Employers)

Summer, winter-break, and spring-break work collecting asbestos air samples at industrial sites and AHERA project management at school abatement sites.

CREDENTIALS

Certifications & Licensure

* ABIH Certified in Comprehensive Practice of Industrial Hygiene (9537)
* Asbestos Project Designer: Illinois (100-08266), (Inactive: IN)
* Asbestos Management Planner: Illinois (100-08266)
* Asbestos Building Inspector: Illinois (100-08266), Indiana (19A010477) (Inactive: NE, LA, MI, OH)
* Asbestos Project Manager, Illinois (Inactive, 100-08266)
* Asbestos Air Sampling Professional, Illinois (100-08266), N. Carolina (Inactive, 90144)
* Lead Risk Assessor, Illinois (011344), Missouri (Inactive, 100217-300002738)
* Mold Assessor, Florida (Inactive, AC#5486176)

Memberships

* Member, American Industrial Hygiene Association (AIHA) Chicago Local Section
  - Board of Directors 2009-2016
  - President 2014-2015
* Member, American Industrial Hygiene Association (AIHA)
  - Member of the Risk Committee
* Diplomate, American Board of Industrial Hygiene (ABIH)
* Member, International Society of Exposure Science (ISES)
* Member, Society for Risk Assessment (SRA)
* Member, ACGIH

AWARDS AND RECOGNITION

2011 AIHA Future Leaders Institute: Recognized as a future leader in the industrial hygiene profession.
2016 AIHA Chicago Local Section "Past-President" service recognition award.

PUBLICATIONS

"Emerging Drivers for Legionella Risk Management", Pollution Equipment News. April 2018.

"A Bayesian Model and Stochastic Exposure (Dose) Estimation for Relative Exposure Risk Comparison Involving Asbestos-Containing Dropped Ceiling Panel Installation and Maintenance Tasks", Risk Analysis. 37(9): 1729-1741. (DOI: 10.1111/risa.12733). September 2017.

"Characterizing and Communicating Risk with Exposure Reconstruction and Bayesian Analysis: Historical Locomotive Maintenance/Repair Associated with Asbestos Woven Tape Pipe Lagging", Risk Analysis. 36(2): 228-43. (DOI: 10.1111/risa.12458). February 2016.

"Understanding Nanotechnology – Related Risks and Regulation", ABA Toxic Torts and Environmental Law Committee Newsletter. Summer 2014.

PRESENTATIONS

"Bolivian Mineral Mining and Milling: Characterizing Dust", AIHce Philadelphia, Pennsylvania, Podium Session L11. Presenter – May 2018.

"Risk Assessment for the Use of a Phenolic Biocide", AIHce Philadelphia, Pennsylvania, Podium Session F8. Presenter – May 2018.

"Legionellosis Risk Reduction: Application of the CDC Toolkit and ASHRAE 188 Standard for CMS Compliance", Webinar, Industrial Hygiene News. Presenter – April 2018.

"All the World's a Risky Stage: Professionally and Personally Applied Make-up Chemistry and Exposures", AIHce Seattle, Washington, Podium Session K3. Presenter – June 2017.

"Risk Assessment for Unapproved Uses of a Phenolic Biocide in the Remediation and Restoration Industry", British Occupational Hygiene Society OH2017 Annual Conference, Harrogate, England, United Kingdom. Poster Station 10 – April 2017.

"Reviewing the Recent Uptick in Talc Cases: Litigating Claims Involving Products Containing Talc (Industrial, Cosmetic) and Determining How the Increase in Ovarian Cancer Claims Factors into These", American Conference Institute's 22nd National Advanced Forum on Asbestos Claims and Litigation, Philadelphia, Pennsylvania. Panelist – January 2017.

"Big Data and Assessing Exposures & Risks: When Too Much Seems Like Never Enough", AIHce Baltimore, Maryland, Podium Session 109. Presenter – May 2016.

"Give 'Em a Break: Getting Aggressive with Understanding Brakes", AIHce Baltimore, Maryland, Podium Session 103. Presenter – May 2016.

"Nanoscale Titanium Dioxide in Cosmetics: Is Everything Beautiful?", British Occupational Hygiene Society OH2016 Annual Conference, Session 3c, Glasgow, Scotland, United Kingdom. Presenter – April 2016.

"Talc: The Next Wave of Litigation", Environmental and Emerging Claim Manager Association 2016 Annual Conference, Orlando, FL. Presenter – April 2016.

"Nanotechnology & Carbon Nanotubes: The New Pulmonary Fibrosis", Harris Martin Emerging Toxic Tort Litigation Conference, Long Beach, CA. Presenter – December 2015.

ASHRAE & AIHA Standards Applicable to Commercial Building and School Building Ventilation Systems. 27th Annual Chicagoland Safety, Health & Environmental Conference, Naperville, Illinois. Presenter – September 2015.

Regulatory, Legal, and Analytical Considerations for Assessing Consumer Risk from Titanium Dioxide in Personal Care Products. AIHce Salt Lake City, Utah, Podium Session 121. Presenter (J. Persky, L. Haroun) – June 2015.

Characterizing Risk at an Industrial Site from Leaking Underground Storage Tanks Containing Diesel Fuel. AIHce Salt Lake City, Utah, Podium Session 103. Presenter (J. Persky, F. Boelter, S. Song, B. Schnorr) – June 2015.

Modeling Historical Risk to Industrial Building Occupants from Leaking Underground Storage Tank Vapor Intrusion. AIHce Salt Lake City, Utah, Podium Session 124. Co-Author (F. Boelter, J. Persky, S. Song, B. Schnorr) – June 2015.

Communicating Exposure and Risk Concepts Regarding Railroad Maintenance and Repair Workers. AIHce Salt Lake City, Utah, Podium Session 103. Co-Author (F. Boelter, J. Persky, D. Podraza, W. Bullock) – June 2015.

Managing Lab Error in Toxic Tort Litigation and Environmental Claims: The End-User Perspective on Data Usability. ABA Tort Trial & Insurance Practice 24th Annual CLE Meeting, Phoenix, Arizona. Panelist – April 2015.

Big Data & Assessing Exposures. AIHA Yuma Pacific-Southwest Section 40th Annual Meeting, San Diego, California. Presenter – January 2015.

Recreating a Historical Product and Designing Testing Methods to Characterize Exposures Retrospectively. Society for Risk Analysis Annual Meeting, Denver, Colorado. Presenter – December 2014.

Reconstructing Exposures for the Semiconductor Industry to Assess Risks of Hematological Malignancies. Society for Risk Analysis Annual Meeting, Denver, Colorado. Presenter (C. Torres, J. Persky) – December 2014.

Near-Fatal Shock of a Pipefitter during Welding in Confined Space: A Confluence of Multiple Safety Program Shortcomings. AIHce San Antonio, Texas, Round Table Session 242. Presenter (J. Persky, F. Boelter) – June 2014.

Filling Exposure Data Gaps through Product Remanufacturing. AIHce San Antonio, Texas, Podium Session 129. Presenter (J. Persky, F. Boelter) – June 2014.

Asbestos as an Ingredient: Mineral, Formula, and Analytical Considerations for Reformulation. AIHce San Antonio, Texas, Podium Session 135. Presenter (J. Persky, F. Boelter) – June 2014.

Assessing Risks to Pipefitters from Insulation and Gaskets. AIHce San Antonio, Texas, Podium Session 139. Co-Author (F. Boelter, J. Persky) – June 2014.

Jewelry Making Exposure Risk Assessment. AIHce San Antonio, Texas, Podium Session 120. Co-Author (F. Boelter, J. Persky) – June 2014.

Dropped Ceiling Installation and Maintenance: Cumulative Exposures to Asbestos Fibers. AIHce San Antonio, Texas, Podium Session 129. Co-Author (F. Boelter, Y. Xia, J. Persky) – June 2014.

Modeling Benzene Exposure from Wax Wash. AIHce San Antonio, Texas, Podium Session 107. Co-Author (F. Boelter, J. Persky) – June 2014.

A New Look at Benzene: Cases where Benzene is a Contaminant. ABA Tort Trial & Insurance Practice 23rd Annual CLE Meeting, Phoenix, Arizona. Panelist – April 2014.

Data Quality Assessment: Enriching Balzer & Cooper and P.G. Harries. AIHce Montreal, Quebec, Canada, Podium Session 110. Presenter (J. Persky, F. Boelter) – May 2013.

Missing Data: Unit Imputation Using Stochastic Methods. AIHce Montreal, Quebec, Canada, Podium Session 120. Presenter (J. Persky, F. Boelter) – May 2013.

Assessing Safe Work Practices for Internal Engine Gaskets. BOHS Occupational Hygiene 2013. Manchester, England, United Kingdom. Co-Author (F. Boelter, S.Bullock, J. Persky) – April 2013

Assessing Risk by Reconstructing Cumulative Exposures for a Semiconductor Industry. BOHS Occupational Hygiene 2013. Manchester, England, United Kingdom. Co-Author (F. Boelter, L.Dell, C.Torres, R.Jones, J. Persky, J.Poole, P.Harper) – April 2013

Assessing Relative Risks to Pipefitters from Task Specific Activities. BOHS Occupational Hygiene 2013. Manchester, England, United Kingdom. Co-Author (F. Boelter, J. Persky) – April 2013.

Assessing Risk for an International Occupational Safe Work Practice. World Congress on Risk, Society for Risk Analysis. Sydney, Victoria, Australia. Co-Author (F. Boelter, S. Bullock, J. Persky) – July 2012.

Historical Exposure Reconstruction Related to Railroad Locomotive Maintenance, ENVIRON International Corporation, AIHce Indianapolis, Indiana, Podium Session 117. Presenter (J. Persky, F. Boelter, W. Bullock, L. Liukonen, D. Shackelford) - June 2012

Systematic Bias Associated with Using STEL Samples to Calculate TWAs, ENVIRON International Corporation, AIHce Indianapolis, Indiana, Podium Session 104. Presenter (J. Persky, F. Boelter, M. Hawley, J. Lang) - June 2012.

IAQ Implications from Ultrafine Particulates during Smoke Testing of Plumbing Stacks to Locate Sewer Gas Leaks in a High-Rise Building, ENVIRON International Corporation, AIHce Indianapolis, Indiana, Podium Session 113. Co-Author (J. Persky, M. Baquiran) - June 2012.

An Exposure Assessment Strategy and JEM for a Semiconductor Industry, ENVIRON International Corporation, AIHce Indianapolis, Indiana, Podium Session 104. Co-Author (F. Boelter, J. Persky, C. Torres, J. Poole, P. Harper) - June 2012.

Assessing Risk of Leukemia and Lymphoma by Reconstructing Exposures for a Semiconductor Industry, ENVIRON International Corporation, AIHce Indianapolis, Indiana, Podium Session 117. Co-Author (F. Boelter, R. Jones, J. Persky, L. Dell, C. Torres, J. Poole, P. Harper) - June 2012.

Development and Validation of an International Safe Work Practice. AIHce Indianapolis, Indiana, Podium Session 106. Co-Author (F. Boelter, J. Persky, S. Bullock) – June 2012.

A Semi-Conductor Industry Exposure Reconstruction and Risk Assessment. International Commission on Occupational Health Congress 2012. Cancun, Mexico. Co-Author (F. Boelter, C. Simmons, C. Torres, L. Dell, R. Jones, J. Persky, J. Poole, P. Harper) - March 2012.

A Semi-Conductor Industry Exposure Assessment. International Commission on Occupational Health Congress 2012. Cancun, Mexico. Co-Author (F. Boelter, C. Torres, J. Poole, C. Simmons, R. Jones, J. Persky, L. Dell, P. Harper) - March 2012.

H*ealthy Places Coalition Internship: EPA RRP Rule Impacts in Kane County*, Benedictine University, Lisle, IL. Presenter - March 2012.

Radon: A Community Health Concern, Kane County Health Department, Healthy Places Coalition, Aurora, Illinois. Presenter - February 2012.

Using Tracer Gas to Determine Air Exchange Rate: A Side-by-Site Comparison of Instrumentation, ENVIRON International Corporation, AIHce Portland, Oregon, Poster Session 401-7. Presenter (J. Lang, J. Persky, C. Simmons, R. Jones) - May 2011.

Hydrogen Fluoride and Carbon Monoxide Aggregate Exposure Reconstruction, ENVIRON International Corporation, AIHce Portland, Oregon, Podium Session 109. Presenter (J. Persky, F. Boelter) - May 2011.

School IEQ Issues Involving a Rapid Turnaround Fire Restoration Project, ENVIRON International Corporation, AIHce Toronto, Canada, Podium Session 293. Co-Author (G. Crawford, J. Persky) - June 2009.

CONTINUING EDUCATION

May 2018 Paulsboro Refinery Technical Tour. AIHce 2018 session TT-06. "*Operational tour of a petroleum refinery with a throughput capacity of 180,000 bpd.*" Paulsboro, New Jersey.

April 2018 Hot Topics in Toxic Torts and Environmental Law. ABA Tort Trial & Insurance Practice Section, Phoenix, Arizona.

Feb. 2018 Harris Martin's California Wildfire Litigation Conference. *"Strategic Overview of The North Bay Fires"*, San Francisco, California.

Oct. 2018 Enhancement of Fire Safety Knowledge and Skills. Fox Valley Fire & Safety, Elk Grove Village, Illinois.

June 2017 Boeing 737 Technical Tour. AIHce 2017 session TT-01. "*Manufacturing and assembly of Boeing's large products and the unique industrial hygiene challenges they present.*" Renton, Washington.

April 2017 British Occupational Hygiene Society OH2017 Annual Conference. Harrogate, England, United Kingdom.

April 2017 Hot Topics in Toxic Torts and Environmental Law. ABA Tort Trial & Insurance Practice Section, Phoenix, Arizona.

Jan. 2017	American Conference Institute's 22nd National Advanced Forum on Asbestos Claims and Litigation, Philadelphia, PA.
May 2016	Naturally Occurring Asbestos to Zeolites: A Comprehensive Assessment. AIHce PDC 420, Baltimore, Maryland.
May 2016	Legionella and Other Waterborne Pathogens: Recognition, Evaluation, and Control. AIHce PDC 108, Baltimore, Maryland.
May 2016	Harris Martin's Talcum Powder Ovarian Cancer Litigation Conference, Charleston, SC.
May 2016	Harris Martin's Asbestos Litigation Conference: Talc and Other Unique Exposures, Charleston, SC.
April 2016	British Occupational Hygiene Society OH2016 Annual Conference. Glasgow, Scotland, United Kingdom.
April 2016	Environmental and Emerging Claim Manager Association Annual Conference, Orlando, FL.
Nov. 2015	Bayesian Decision Analysis. AIHA Chicago Local Section, Chicago, Illinois.
Dec. 2015	Harris Martin Emerging Toxic Tort Litigation Conference, Long Beach, CA.
April 2015	Legionella and Waterborne Pathogens. AIHA Chicago Local Section, West Chicago, Illinois.
April 2015	Cutting-Edge Scientific and Legal Trends in Toxic Torts and Environmental Law. ABA Tort Trial & Insurance Practice Section, Phoenix, Arizona.
Jan. 2015	Tools, Technology, and Big Data. Yuma Pacific Section 2015 Annual Meeting, San Diego, California.
Nov. 2014	Ebola Evaluation and Control. AIHA Chicago Local Section, Chicago, Illinois.
March 2014	Pharmaceutical Industrial Hygiene Management and Analysis. AIHA Chicago Local Section, Lake Bluff, Illinois.
August 2013	Navigating Professional Ethical Dilemmas: Staying Out of Trouble. AIHA Chicago Local Section, Chicago, Illinois.
June 2013	Combustible Dust: Industrial Hygiene and Regulatory Perspectives. AIHA Chicago Local Section, Lisle, Illinois.
May 2013	Asbestos Health Risk Assessment: Modeling, Characterization, and Communication. AIHce PDC 112, Montreal, Quebec.

May 2013	Fundamentals of Occupational Toxicology. AIHce PDC 603, Montreal, Quebec.
Nov. 2012	Engineered Nanomaterials: Exposure Assessment Strategies and Current Topics. AIHA Chicago Local Section, Argonne, Illinois.
Sept. 2012	Crystal Ball 11.1.2 Essential Ed 1 – Oracle University, Chicago, Illinois.
April 2012	Hazardous Waste Site Worker 40-hr – Occupational Training and Supply, Inc., Willowbrook, Illinois.
Sept. 2011	Bedbugs: The Reemergence of a Public Health Issue. AIHA Chicago Local Section, Chicago, Illinois.
May 2011	Using Mathematical Models to Estimate Exposures. AIHce PDC 709, Portland, Oregon.
May 2011	Industrial Hygiene Issues During Fire Safety Testing: Underwriters Laboratory. AIHA Chicago Local Section, Northbrook, Illinois.
March 2011	Legal Aspects of Industrial Hygiene. AIHA Chicago Local Section, Willowbrook, Illinois.
October 2010	Industrial Hygiene Regulatory Update. AIHA Chicago Local Section, Lisle, Illinois.
October 2010	Introduction to Incident Command System, IS-100. FEMA Online Course.
October 2010	National Incident Management System (NIMS), IS-700a. FEMA Online Course.
Sept. 2010	Medical Aspects of Industrial Hygiene. AIHA Chicago Local Section, Chicago, Illinois.
Sept. 2010	RMD LPA-1 Lead Paint Inspection System – RMD, Watertown, Massachusetts
May 2010	Industrial Hygiene Issues in the Electronics Recycling Industry. AIHA Chicago Local Section, West Chicago, Illinois.
April 2010	Ethical Crisis in Leadership: Implications for the Profession. AIHA Chicago Local Section, Wheeling Illinois.
March 2010	Sustainability: Impact on the IH Community. AIHA Chicago Local Section, Rolling Meadows, Illinois.
Feb. 2010	Practical Noise Control Engineering. Associates in Acoustics, Inc. Teleweb. AIHA Chicago Local Section, Chicago, Illinois.
Dec. 2009	2-hr Asbestos Louisiana Regulations Orientation – Mendez Environmental Training Services, Inc., Kenner, Louisiana.
October 2009	Pandemic Planning. AIHA Chicago Local Section, Lisle, Illinois.
Sept. 2009	Forensic Microscopy. AIHA Chicago Local Section, Rosemont, Illinois.
August 2009	Professional Ethics, Doing What is Right in the Practice of Industrial Hygiene. AIHA Distance Learning Teleweb.
May 2009	Chicago's Deep Tunnel & the World's Largest Wastewater Treatment Facility. AIHA Chicago Local Section, Stickney, Illinois.

April 2009	Asbestos Project Designer Initial – Environmental Management Institute, Indianapolis, Indiana
March 2009	Hot Topics in Construction Health & Safety. AIHA Chicago Local Section, Palatine, Illinois.
Nov. 2008	Combustible Dust. AIHA Chicago Local Section, Chicago, Illinois.
Oct. 2008	West Nile Virus Vectors and Zoo Safety and Health. AIHA Chicago Local Section, Brookfield Zoo, Brookfield, Illinois.
Dec. 2008	Legionella Sampling, Analysis, and Results Interpretation. IAQA Chicago Chapter, Oakbrook, Illinois.
January 2008	Nebraska Law, Rules, and Regulations for Asbestos. Educational Institute for Asbestos Training, Lincoln, Nebraska.
Nov. 2007	Building Science and HVAC Systems. AIHA, Las Vegas, Nevada.
Oct. 2007	Bringing Toxicology to Global Issues in Occupational and Environmental Public Health. PCIH, Louisville, Kentucky.
Oct. 2007	Bayesian Statistics: Overview and Applications in Industrial Hygiene Data Interpretation and Exposure Risk Assessment. PCIH, Louisville, Kentucky.
Oct. 2007	Industrial Hygienists as Experts in Trial and Depositions. PCIH, Louisville, Kentucky.
Oct. 2007	Beyond IH Fundamentals. AIHA, Pittsburgh, Pennsylvania.
Sept. 2007	The Quiet Sickness: Then & Now, A Photographic History of Industrial Hygiene. AIHA Chicago Local Section, Willowbrook, Illinois.
July 2007	Fundamentals of Industrial Hygiene. AIHA, Chicago, Illinois.
May 2007	Nanoparticle Update: Measuring, Evaluating, and Managing Exposures. AIHA Distance Learning Webinar.
March 2007	Occupational Exposure to Isocyanates. AIHA Chicago Local Section, Palatine, Illinois.
March 2007	Comprehensive Industrial Hygiene Review. AIHA, Ann Arbor, Michigan.
Feb. 2007	Mold, Allergens, Sampling, and Report Interpretation. Environmental Microbiology Laboratory, Inc., Naperville, Illinois.
Feb. 2007	Occupational Noise Exposure Measurement. Quest Technologies, Oconomowoc, Wisconsin.
March 2005	NITON XRF Spectrum Analyzer: Manufacturer's Training Course. NITON, LLC, Chicago, Illinois.
Sept. 2004	16-hr Lead Risk Assessor Initial Course – Public Health & Safety, Inc., Chicago, Illinois.

August 2004 Business Writing Basics for Professionals – SkillPath, Mission, Kansas.

Dec. 2003 24-hr Lead Inspector Initial Course – Public Health & Safety, Inc., Chicago, Illinois.

August 2003 Warrington Microlead I XRF Analyzer Operation and Radiation Safety – Mattie Belle, Inc., Chicago, Illinois.

Feb. 2003 16-hr Asbestos Management Planner Initial Course – Amerisafe, Inc., Melrose Park, Illinois.

Feb. 2002 24-hr Asbestos Building Inspector Initial – Occupational Training and Supply, Inc., Alsip, Illinois.

January 2002 16-hr Mold Remediation: EPA and NY State Health Dept. Guidelines. Amerisafe, Inc., Melrose Park, Illinois.

March 1998 Asbestos Abatement Contractor / Supervisor Initial Training Course – Professional Service Industries, Inc., Lombard, Illinois.

May 1997 Asbestos Fiber Counting – NIOSH 582 Equivalency, Sampling and Evaluating Airborne Asbestos Dust, Asbestos Project Management, Downers Grove, Illinois.

Annual Regulatory Compliance Refresher Training

1999 – 2015 8-hr Asbestos Project Supervisor Refresher – Occupational Training and Supply, Inc., Willowbrook, Illinois.

2003 – 2018 4-hr Asbestos Building Inspector Refresher – Occupational Training and Supply, Inc., Willowbrook, Illinois.

2004 – 2018 4-hr Asbestos Management Planner Refresher – Occupational Training and Supply, Inc., Willowbrook, Illinois.

2010 – 2018 4-hr Asbestos Project Designer Refresher – Occupational Training and Supply, Inc., Willowbrook, Illinois.

2008 – 2017 8-hr Triennial Lead Risk Assessor Refresher – Occupational Training and Supply, Inc., Willowbrook, Illinois

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fpagone@rhprisk.com
www.rhprisk.com

CURRICULUM VITAE SUMMARY – December 2018

Frank Pagone has more than 6 years of environmental health and safety education and research. Dr. Pagone received his B.S. from Purdue University and both his M.S. in Public Health – Industrial Hygiene and Ph.D. in Public Health from the University of Illinois at Chicago (UIC). His graduate research focused on Human Health Risk Assessment and Geographic Information Systems (GIS), and he is certified in Geospatial Analysis and Visualization with a focus on GIS. His research topics include environmental human health risk assessment including probabilistic risk assessment, exposure assessments and cancer risk analysis, and spatial statistics. Dr. Pagone has also consulted on data management and analysis including collection of population, health, employment, environmental risk/hazard, and housing data as well as taught a variety of topics including air and water quality and management, industrial hygiene, and statistics.

EDUCATION

2017	Doctor of Philosophy – University of Illinois at Chicago, Chicago, IL
2013	Master of Science in Public Health – University of Illinois at Chicago, Chicago, IL
2009	Bachelor of Science – Purdue University, West Lafayette, IN

EXPERIENCE

October 2018 to Present – Senior Associate, RHP Risk Management, Chicago, IL

Responsibilities include the support and execution of IH services defining, analyzing, characterizing, assessing, and managing occupational and non-occupation risks to human health and the environment and research of a variety of environmental health and safety topics.

May 2017 to October 2018 – Associate, RHP Risk Management, Chicago, IL

Responsibilities include the support of IH services defining, analyzing, characterizing, assessing, and managing occupational and non-occupation risks to human health and the environment and research of a variety of environmental health and safety topics.

June 2016 to January 2016 – Consultant, National Collaborative for Health Equity (NCHE)

Assisted NCHE on data collection, data analysis/review, and report development for the jurisdictions in which they serve. This requires finding and collecting population, health,

employment, environmental risk/hazard, and housing data from available sources (e.g., US Census, American Community Survey, US EPA) for the locations of the NCHE Teams, analyzing data using statistical and GIS approaches, interpreting data qualitatively and quantitatively, and generating reports to disseminate information to stakeholders.

October 2016 – Consultant, University of Illinois at Chicago, Chicago, IL

Performed environmental sampling at three locations in the City of Chicago for PM2.5 and metals using three Airmetrics MiniVol portable air samplers. Sampling included receiving the filters from the laboratory, setting up the samplers, performing the sampling at each site, and preparing the filters for lab analysis.

August 2015 – Assistant Instructor CIH Exam Preparatory Course, OSHA Training Institute Center, Arlington Heights, IL

Provided instruction via presentation and exercises on Statistics and Air Pollution Control as well as assisted with classroom questions throughout the course.

August 2011 to May 2017 – Teaching Assistant/Research Assistant/NIOSH Trainee

Teaching Assistant

Community Health Initiatives

Determinants of Population Health (Online)

Principles of Environmental Health Science (Online)

Air Quality Assessment and Management (Lecture and Laboratory)

Industrial Hygiene Laboratory (Lecture and Laboratory)

Water Quality and Management (Online)

Environmental Risk Assessment and Management (Online)

Research Assistant/NIOSH Trainee

- Completed a PhD Dissertation proposal that focused on identifying macro-scale environmental justice areas for carcinogenic and non-carcinogenic health effects in Cook County, IL for targeted interventions and health improvement measures for socio-economically disadvantaged communities with high environmental pollution burden.
- Successfully passed the PhD Preliminary Examination
- Completed a Master's Thesis titled "USEPA's National Air Toxics Assessment: Emissions and Cancer Risk Analysis in Cook County, IL" and graduated with a Master's of Science in Public Health degree from an ABET Accredited Industrial Hygiene Program.
- Conducted research and performed GIS analysis for an environmental and health disparities research project funded by NIH using EPA's Toxic Release Inventory (TRI) and The National Air Toxics Assessment (NATA).
- Analyzed TRI and NATA data for Illinois counties to determine chemicals, industrial source categories and type of emissions contributing most to air toxic emissions to guide future regulatory policy for ambient air emissions control.

- Evaluated the 2005 NATA results to determine geographical areas, pollutants, and emissions sources that can be targeted for further reduction, and compare cancer risks for Benzene and Formaldehyde based on measured data at three fixed-site air monitoring stations in 2005 to those based on modeled EPA's 2005 NATA estimates using both the traditional NATA approach and the EPA Superfund guidance approach.

CREDENTIALS

Certifications

- Certificate in Geospatial Analysis and Visualization – University of Illinois at Chicago, Chicago, IL.
- Asbestos Analysts Registry (AAR) Registered Analyst

Memberships

- Member, American Industrial Hygiene Association (AIHA)
- Member, American Industrial Hygiene Association (AIHA) Chicago Local Section
  - Secretary 2017-2019
- Member, Society of Risk Assessment (SRA)
- Member, Delta Omega Honorary Society in Public Health

AWARDS AND RECOGNITION

2016 Stephan H. Rothblatt Scholarship Air and Waste Management Association, Lake Michigan States Section

2016 Best Student Poster Award, AIHA Risk Assessment Committee, American Industrial Hygiene Association Annual Conference and Exposition, Baltimore, MD.

2016 Northeastern Illinois Chapter Scholarship, American Society of Safety Engineers Foundation

2016 Michael Bruton Workplace Safety Foundation Scholarship

2015 Best Student Poster Award, AIHA Computer Applications Committee, American Industrial Hygiene Association Annual Conference and Exposition, Salt Lake City, UT

2015 American Industrial Hygiene Foundation (AIHF) 75th Anniversary Scholarship

2015 Thomas W. Pollock Memorial Scholarship, American Society of Safety Engineers Foundation

2014 Best Student Poster Award, AIHA Minority Special Interest Group Committee, American Industrial Hygiene Association Annual Conference and Exposition, San Antonio, TX

2013 Inducted into the Delta Omega Honorary Society in Public Health

2013 2nd Place Winner of the Masters Level Student Poster Competition
Air and Waste Management Association 106th Annual Conference and Exhibition, Chicago, IL

2013 Award of Appreciation, AIHA Social Concerns Committee (Montreal, QC & Indianapolis, IN)

PUBLICATIONS

"USEPA's National Air Toxics Assessment: Emissions and Cancer Risk Analysis in Cook County, IL." MSc Thesis – Published. http://hdl.handle.net/10027/10241

"Environmental Justice in Cook County, IL: Air and Land Pollution" PhD Dissertation – Published. http://hdl.handle.net/10027/22204

PRESENTATIONS

"Bayesian Analysis of Residual Risk: This is What We Mean by Safe", Oral Presentation, Society for Risk Analysis Annual Meeting, New Orleans, LA, 2018.

"*Diesel Engine Exhaust and Cancer: Current State of Population Risk"* Poster Presentation, American Industrial Hygiene Association Annual Conference and Exposition, Philadelphia, PA, 2018

"What Does the Current Unit Risk Estimate used for Diesel Particulate Matter Cancer Risk Calculations Indicate for Worker and Environmental Health? Oral Presentation, Society for Risk Analysis Annual Meeting, Arlington, VA, 2017.

"Assessment of Environmental Justice in Cook County for Diesel Particulate Matter Related Cancer Risk", Poster Presentation, University of Illinois at Chicago School of Public Health 12th Annual Research and Practice Awards Day, Chicago, IL, 2017

"Use of Geospatial Analysis in Environmental and Occupational Health", Presentation, American Industrial Hygiene Association Chicago Local Section Student Night, Chicago, IL, 2016

"Comparison of Perceived Environmental Risk and Modeled Environmental and Occupational Health in Southeastern Cook County, IL", Poster Presentation, American Industrial Hygiene Association Annual Conference and Exposition, Baltimore, MD, 2016

"Environmental, Neighborhood, and Health Outcome Risk Ranking Analysis in Southeastern Cook County, IL" Poster Presentation, UIC Student Research Forum Chicago, IL, 2016.

"Use of Geospatial Analysis in Environmental and Occupational Health: IEPA Brownfield Site Cluster Identification", Poster Presentation, American Industrial Hygiene Association Annual Conference and Exposition, Salt Lake City, UT, 2015

"Excess Cancer Risks for Cook County, IL for Benzene and Formaldehyde: EPA Air Monitoring Data vs. EPA's NATA Model Data", Poster Presentation, International Society of Exposure Science – Late Breaking Poster Presentations, Cincinnati, OH, 2014

"Excess Cancer Risks for Cook County, IL for Benzene and Formaldehyde: EPA Air Monitoring Data vs. EPA's NATA Model Data", Poster Presentation, American Industrial Hygiene Association Annual Conference and Exposition, San Antonio, TX, 2014

"USEPA's National Air Toxics Assessment: Emissions and Cancer Risk Analysis in Illinois and Cook County", Poster Presentation, Air and Waste Management Association 106th Annual Conference, Chicago, IL, 2013

"USEPA's National Air Toxics Assessment: Emissions and Cancer Risk Analysis in Illinois and Cook County", Poster Presentation, American Industrial Hygiene Conference and Exposition, Montreal, QC, 2013

PRESENTATIONS CONT.

"USEPA's National Air Toxics Assessment: Emissions and Cancer Risk Analysis in Illinois and Cook County", Poster Presentation, UIC Student Research Forum Chicago, IL, 2013.

"Characterization of Air Emissions and Inhalation Cancer Risk in Illinois and Cook County using NATA", Poster Presentation, University of Illinois at Chicago School of Public Health 8th Annual Student Research/Practice Awards Day, Chicago, IL, 2013.

"USEPA's National Air Toxics Assessment: Emissions and Cancer Risk Analysis in Illinois", Poster Presentation, University of Illinois at Chicago 5th Annual Minority Health in the Midwest Conference, Chicago, IL, 2013.

"*USEPA's Toxic Release Inventory Data: Spatial and Temporal Trends in Illinois"*, Poster Presentation, American Industrial Hygiene Conference and Exposition, Indianapolis, IN, 2012

"*USEPA's Toxic Release Inventory Data: Spatial and Temporal Trends in Illinois",* Poster Presentation*,* American Industrial Hygiene Association Chicago Local Section Student Night, Chicago, IL, 2012

CONTINUING EDUCATION

Dec. 2018	Society for Risk Analysis Annual Meeting, New Orleans, LA
Aug. 2018	Microscopical Identification of Asbestos, McCrone Research Institute, Chicago, IL
May 2018	American Industrial Hygiene Association Annual Conference and Exposition, Philadelphia, PA
May 2018	HC Info Legionella Assessment and Management Plan Support (LAMPS) Training Courses (101 – 104 and 401 – 404)
April 2018	Asbestos Fiber Counting Course (NIOSH 582), McCrone Research Institute, Chicago, IL
Dec. 2017	Society for Risk Analysis Annual Meeting, Arlington, VA
July 2017	GHS and OSHA Hazardous Communication, 360 Training.com (Online)
June 2017	American Industrial Hygiene Association Annual Conference and Exposition, Seattle, WA
June 2017	PDC 604 Information and Causation for Health Risk Assessment, American Industrial Hygiene Association Annual Conference and Exposition, Seattle, WA
May 2016	American Industrial Hygiene Association Annual Conference and Exposition, Baltimore, MD
June 2015	American Industrial Hygiene Association Annual Conference and Exposition, Salt Lake City, UT
Oct. 2014	International Society of Exposure Science Annual Meeting, Cincinnati, OH.

CONTINUING EDUCATION CONT.

June 2014	American Industrial Hygiene Association Annual Conference and Exposition, San Antonio, TX
Oct. 2013	Lafarge Mine Tour, American Industrial Hygiene Association Chicago Local Section Event, South Elgin, IL
May 2013	American Industrial Hygiene Association Annual Conference and Exposition, Montreal, QC
May 2013	PDC Train-the-Trainer Workshop Improving IH Exposer Judgments, American Industrial Hygiene Association Annual Conference and Exposition, Montreal, QC
June 2013	Air and Waste Management Association 106th Annual Conference and Exhibition, Chicago, IL
April 2013	CBRNE Standardized Awareness Training Program, Indirect Delivery Center for Domestic Preparedness, FEMA US Department of Homeland Security
April 2013	Hospital Emergency Response Training: Basic, Indirect Delivery, Center for Domestic Preparedness, FEMA US Department of Homeland Security
Jan. 2013	Ethics Webinar, American Industrial Hygiene Association Chicago Local Section Event, Chicago, IL
Nov. 2012	Engineered Nanomaterials: Exposure Assessment Strategies and Current Topics, American Industrial Hygiene Association Chicago Local Section Event, Argonne, IL
June 2012	American Industrial Hygiene Association Annual Conference and Exposition, Indianapolis, IN
May 2012	Voluntary Protection Programs Participants' Association Conference, Schaumburg, IL
May 2012	40-hr HAZWOPER Training Course, University of Illinois Hazardous Materials Training Program

Annual Regulatory Compliance Refresher Training

July 2017	8-hr HAZWOPER Refresher, 360 Training.com (Online)
Dec. 2018	8-hr HAZWOPER Refresher, 360 Training.com (Online)

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CURRICULUM VITAE SUMMARY – January 2019

Jason Lang has worked in the field of EHS consulting as an industrial hygienist for 10 years. His previous work experience in the construction industry as an electrician and carpenter provides a unique perspective in worker risk based behaviors, work practices, and specific product and equipment knowledge which has aided in the performance of exposure assessments, exposure reconstructions, statistical analyzes, and modeling. He has performed investigations and audits into occupational and environmental noise issues, laboratory chemical hygiene compliance, asbestos sourcing in a product supply chain, and asbestos abatement work practices in large refineries. He has provided support in litigation involving toxic tort, premises liability, chemical release, occupational safety and health, and product liability actions. He is certified by the American Board of Industrial hygiene in the comprehensive practice of industrial hygiene. He was trained as an industrial hygienist at Purdue University.

EDUCATION

2009, Bachelor of Science – Occupational Health Sciences, Purdue University, West Lafayette, IN

EXPERIENCE

January 2018 to Present – Manager, RHP Risk Management, Chicago, IL

Responsibilities include management of staff and providing technical industrial hygiene oversite and project management of projects and services by defining, analyzing, characterizing, assessing, and managing occupational and non-occupational risks to human health and the environment; exposure assessments and reconstructions; designing and implementing engineering and administrative controls; conducting investigations and audits; advising Health, Safety, and Environmental (HSE) management.

September 2015 to December 2017 – Senior Associate, RHP Risk Management, Chicago, IL

Responsibilities include the overall support and project management of IH services defining, analyzing, characterizing, assessing, and managing occupational and non-occupational risks to human health and the environment; exposure assessments and reconstructions; designing and implementing engineering and administrative controls; conducting investigations and audits; advising Health, Safety, and Environmental (HSE) management.

January 2015 to August 2015 – Senior Associate, Ramboll Environ, Chicago, IL

Responsibilities included overall support and project management of IH services including exposure assessments and reconstructions; designing and implementing engineering and administrative controls; conducting investigations and audits in manufacturing settings, offices, and laboratories; advising Health, Safety, and Environmental (HSE) management; health and safety program development; asbestos abatement project management in schools and commercial settings; management of Ramboll Environ Chicago's Asbestos Analyst Registry Program and AIHA accredited laboratory; asbestos PCM analyst.

May 2009 to January 2015 – Senior Associate, ENVIRON International Corporation, Chicago, IL

Responsibilities included overall support of IH services including exposure assessments and reconstructions; conducting investigations and audits in manufacturing settings, offices, and laboratories; advising Health, Safety, and Environmental (HSE) management; health and safety program development. Provided project management for asbestos abatement projects in schools and commercial buildings; participant of Environ Chicago's Asbestos Analyst Registry Program and AIHA accredited laboratory; asbestos PCM analyst.

May 2008 to August 2008 – Associate Internship, ENVIRON International Corporation, Chicago, IL

Responsibilities included technical support for historical exposure reconstruction project, including testing equipment procurement, testing facility preparation, and ventilation setup and validation with tracer gas testing. Additionally, provided assistance during IH assessments, indoor air quality investigations in schools, noise monitoring and mapping, lab hood assessments and lab audits, and general research.

August 2001 to September 2007 – Electrician, Central Indiana

Responsibilities included project management and installation of electrical equipment and wiring for residential, commercial, and light industrial projects, and troubleshooting and repairing of client electrical issues.

CREDENTIALS

Registrations and Certifications

* Certified in Comprehensive Practice of Industrial Hygiene (CIH), ABIH, #10537 CP
* Certified by the Board of Certified Safety Professionals (CSP), CSP-35619
* Licensed Asbestos Project Manager (Illinois IDPH ID#100-18407)
* Licensed Asbestos Building Inspector (Illinois IDPH ID#100-18407)
* Licensed Air Sampling Professional (Illinois IDPH ID#100-18407)
* 40-Hour OSHA Training Program in Hazardous Waste Worker/Emergency Response Technician
* 30-Hour OSHA Training Course in General Industry Safety & Health
* FEMA Independent Study Certifications - IS-100, IS-200, IS-700, IS-800.B

Professional Affiliations and Activities

* American Industrial Hygiene Association (AIHA)
* Chicago Local Section of AIHA

Committee and Board Memberships

American Industrial Hygiene Association (Chicago Section)

* Past President – May 2018 to Present
* President – May 2017 to May 2018
* President Elect – January 2017 – May 2017
* Board of Directors - 2012 to January 2017

Chicagoland Safety Health and Environmental Conference (CSHEC)

* Steering & Planning Committee Industrial Hygiene Track Leader – 2014, 2015, 2018

American Industrial Hygiene Association (Purdue Student Section)

* Secretary – 2008 to 2009

PRESENTATIONS

* October 2018 – "Powered Industrial Sweeper Crystalline Silica Exposure Study", American Foundry Society (AFS) 30th Annual Environmental Health & Safety Conference, Warrensville Heights, OH.
* June 2018 – "Silica: OSHA Regulation Update and Impact", Claims and Litigation Management (CLM) 2018 Webinar Series, www.theCLM.org.
* September 2016 & 2017 – "Industrial Hygiene Consulting", Guest Lecturer for Industrial Hygiene Class HSCH 446, Purdue University, West Lafayette, IN.
* September 2015 – "Laboratory Ventilation", Chicagoland Safety Health & Environmental Conference, Naperville, IL.
* June 2014 – "From Electrician to Industrial Hygienist: An Inside View of the Construction Industry", AIHce, San Antonio, TX.
* March 2014 – "Laboratory Fume Hoods: What to Look for in an Audit", EHS Auditing Roundtable, Chicago, IL.
* May 2011 – "Using a Tracer Gas to Determine Air Exchange Rate: A Side-by-Side Comparison of Instrumentation", AIHce, Portland, OR.
* May 2010 – "Sampling for Respirable Particulates: A Side-by-Side Comparison of Methods", AIHce, Denver, CO.
* October 2009 – "The Electrical Worker", ENVIRON International Corporation, Chicago, IL.

CONTINUING EDUCATION

* June 2017 – "Strengthening EHS Leadership and Teamwork", AIHce, Seattle, WA.
* June 2017 – "Nanotechnology; Old Theories and New Concepts", AIHce, Seattle, WA.
* March 2015 - Bayesian Decision Analysis I & II, Exposure Assessment Solutions, Inc. Web PDC, Chicago, IL.
* April 2013 - "Electrical Safety in the Workplace", NFPA, Northbrook, IL.
* May 2011 - "Using Mathematical Models to Estimate Exposures", AIHce, Portland, OR.
* March 2010 – "Asbestos Fiber Counting-NIOSH 582", McCrone Research Institute, Chicago, IL.
* May 2010 - "Exposure Assessment Strategies and Statistics Workshops", AIHce, Denver, CO

* June 2008 - “Selecting Respiratory Protection for Biological Aerosol Exposures”, AIHce, Minneapolis, MN.
* June 2008 - “Respirator Fit-Testing: Requirements and Interpretation”, AIHce, Minneapolis, MN.

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CURRICULUM VITAE SUMMARY – December 2018

As a Manager, Luke Nienhaus has more than eleven years of environmental consulting experience, with special emphasis in indoor air quality, industrial hygiene, and due diligence focusing on asbestos, lead-based paint, and microbial contamination. He has extensive experience conducting large-scale asbestos inspections, microbial investigations, water damage remediation oversight, and lead-based paint inspections and risk assessments in schools, offices, industrial facilities, government buildings, and residences. He has recently focused on exposure assessments and exposure reconstruction projects.

EDUCATION

2007 Bachelor of Science - Natural Resources and Environmental Management – Ball State University, Muncie, IN

EXPERIENCE

August 2015 to Present – Senior Associate and Manager, RHP Risk Management Inc., Chicago, IL

Conduct industrial hygiene, indoor air quality, and safety and health projects for commercial, manufacturing and industrial clients. Participate on a team that conducts exposure assessments and exposure reconstruction projects in our Exposure Sciences Laboratory.

November 2014 to August 2015 – Associate, ENVIRON International Corp. / Ramboll Environ US Corporation, Chicago, IL

Conducted technical industrial hygiene and indoor air quality projects for industrial and commercial clients. Responsible for conducting complex microbial assessments and management at various facilities as well as asbestos and lead-based paint project management in schools and public facilities. Participated on a team that conducted historical exposure reconstructions and risk assessments in our controlled environment laboratory.

July 2007 to November 2014 – Project Manager, Environmental Consulting Group, Chicago, IL

Conducted indoor air quality assessments, environmental site investigations, asbestos building material inspections, lead-based paint surveys and risk assessments, and microbial growth

investigations at residential, commercial, and industrial locations. Managed complex asbestos abatement projects at schools and other commercial and industrial sites. Responsible for proposal writing, project budgeting, project management, report writing, and profitability.

Summer 2006 (Internship) – Field Technician, Gabriel Environmental Laboratories, Chicago, IL

Conducted field activities for a variety of clients at multiple commercial and industrial sites around the Chicagoland area. Activities included maintaining a scheduled collection of effluent water samples at various sites, keeping detailed water meter logs for each site, and assisting other associates in collecting soil samples utilizing geo-probe machinery and documenting the samples for analysis.

CREDENTIALS

Certifications & Licensure

- Asbestos Building Inspector: Illinois (100-11369), Wisconsin (AII-122919)
- Asbestos Project Manager, Illinois (100-11369)
- Asbestos Air Sampling Professional, Illinois (100-11369)
- Lead Risk Assessor: Illinois (012854), Indiana (IND000541)

Memberships

- Board Member, American Industrial Hygiene Association Chicago Local Section
- Member, American Industrial Hygiene Association (AIHA)
- Committee Member, Chicagoland Safety, Health, & Environmental Conference

CONTINUING EDUCATION

December 2018	Asbestos Building Inspector Refresher Course, Occupational Training and Supply, Inc.
January 2018	Asbestos Building Inspector/Supervisor Refresher Course, Occupational Training and Supply, Inc.
September 2017	Lead Risk Assessor Refresher Course, Occupational Training and Supply, Inc.
October 2016	Exposure and Chemical Monitoring: Beyond IH Fundamentals. AIHA, Columbus, OH
September 2016	Ventilation Sucks – How to troubleshoot and design better ventilation for air contaminant control. Chicagoland Safety, Health and Environmental Conference, Naperville, IL
September 2016	Fire retardants and fire hazards: Current safety and health issues. Chicagoland Safety, Health and Environmental Conference, Naperville, IL

September 2016	Food Fright: Exposure Issues in the Food Industry. Chicagoland Safety, Health and Environmental Conference, Naperville, IL
September 2016	Ten Years Later, An Update of Hexavalent Chromium Exposure in the Workplace. Chicagoland Safety, Health and Environmental Conference, Naperville, IL
September 2016	Fundamentals in Industrial Ventilation and Practical Applications of Useful Equations. ACGIH, Cincinnati, OH
December 2015	Measurement of the potential exposure to isocyanates, monomers, and oligomers during spray painting
October 2015	Ergo by the Numbers – Ergonomic Stress Measurement Tools, Seminar, Morton Arboretum
September 2015	Comprehensive Industrial Hygiene Review. AIHA, Ann Arbor, MI
September 2015	Ethics Session as part of the Comprehensive Industrial Hygiene Review course. AIHA, Ann Arbor, MI
February 2015	Bayesian Statistics: Overview and Applications in Industrial Hygiene Data Interpretation and Exposure Risk Assessment, Webinar – Dr. Paul Hewitt
April 2013	UIC Radon Course on Measurement – The Great Lakes Centers for Occupational and Environmental Safety and Health
December 2012	Asbestos Abatement Contractor / Supervisor / Project Supervisor Initial Training Course (40-hr) – Occupational Training & Supply, Inc., Willowbrook, IL
May 2012	Basic AutoCAD: 2010/11 DES AO3 CO1, Oakton Community College, Des Plaines, IL
September 2011	Thermo Scientific NITON XRF Spectrum Analyzer: Manufacturer's Radiation Safety Training Course – Chicago, IL
April 2010	Indiana Lead Rules Awareness, 2 Instructional Hour Initial Course – Environmental Management Institute, Indianapolis, IN
March 2010	Lead Safety for Renovation, Repair, and Painting (8-hr) – Occupational Training and Supply, Inc.
October 2007	Lead Risk Assessor Initial Course (16-hr) – Occupational Training and Supply, Inc.
October 2007	Lead Inspector Initial Course (24-hr) – Occupational Training and Supply, Inc.

August 2007	Asbestos Fiber Counting – NIOSH 582 Equivalent Sampling and Evaluating Airborne Asbestos Dust
January 2007	Building Lead Inspector Initial Course (24-hr) – Ball State University, Muncie, IN
May 2006	Hazardous Waste Operations and Emergency Response: OSHA 40 Hour Training – Ball State University, Muncie, IN
January 2006	Building Asbestos Inspector Initial Course (24-hr) – Ball State University, Muncie, IN

CURRICULUM VITAE

Serap Erdal, Ph.D.
Associate Professor
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Environmental and Occupational Health Sciences
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Synopsis: Professor Erdal has a research program in exposure and health risk assessment for environmental and occupational hazards. In addition, she has served as a scientific consultant to many fortune 500 companies, U.S. Department of Defense, and Energy. ***Her areas of expertise include: multi-media human exposure and risk assessment for cancer and non-cancer effects; health and safety evaluation of new chemicals or products; petroleum and alternative fuels; renewable energy sources; hazardous waste site multi-media (air, water, soil, sediment) investigation, remediation and risk management; Brownfields or Superfund site evaluation, redevelopment; sustainable (green) development; indoor and outdoor air pollution; aerosol science and technology, fine and nanoparticle exposure and risk assessment, nanotechnology health and safety evaluation, persistent organic chemicals (PCBs, PBDEs, Dioxins, Furans); lead other toxic metal exposure assessment and abatement; industrial hygiene; retrospective occupational exposure assessment; development of exposure assessment methodologies for epidemiological investigations; technical interpretation of environmental and occupational health and safety regulations (CAA, CWA, TSCA, CERCLA, OSHA); and regulatory science policy analysis.***

Professional and Academic Experience:

2006 – Present: Associate Professor, Environmental and Occupational Health Sciences Division, School of Public Health, University of Illinois, Chicago, Illinois.
2000 – 2006: Assistant Professor, Environmental and Occupational Health Sciences Division, School of Public Health, University of Illinois, Chicago, Illinois.
1998 – 2000: Senior Research Fellow, Environmental and Occupational Health Sciences Institute, Rutgers University and Robert Wood Johnson Medical School, Piscataway, New Jersey.
1994 – 1998: Senior Scientist and Project Manager, Air Quality and Environmental and Occupational Health and Risk Sciences Division. EA Engineering, Science, and Technology, Inc., Washington, D.C., and Seattle, Washington.
1992 – 1994: Research Engineer and Project Manager, State of Washington, Department of Ecology. Air Quality and Nuclear and Hazardous Waste Programs, Bellevue and Olympia, Washington.

Education:

Ph.D.; University of Pittsburgh; Graduate School of Public Health, Department of Environmental and Occupational Health Sciences, Environmental and Occupational Health; 1991
M.Sc.; Istanbul Technical University; Department of Chemical and Metallurgical Engineering, Chemical Engineering; 1984
B.Sc.; Istanbul Technical University; Department of Chemical Engineering, Chemical Engineering; 1982

Honors:

Selection to ***Future Leader's Institute of the American Industrial Hygiene Association***, 2006

K01-***Special Emphasis Research Career Award, National Institute of Occupational Safety and Health***, 2005

Faculty of Distinction Award, University of Illinois-Chicago, 2003

Award for Excellence in Epidemiology (shared with Dr. Faith G. Davis), Society for Neuro-Oncology and American Brain Tumor Association, 2002

Elected to the ***Delta Omega Honorary Public Health Society***, 1991

Membership in Professional and Scientific Organizations:

Society for Risk Analysis
International Society for Exposure Analysis
Air and Waste Management Association
American Industrial Hygiene Association
American Conference of Governmental Industrial Hygienists
British Occupational Hygiene Society
American Association for Aerosol Research
The Association for Environmental Health and Sciences
American Public Health Association
Illinois Public Health Association

Professional Service:

1997	Co-founder, Society for Risk Analysis Puget Sound Regional Chapter
2000	Member of the Human Health Technical Work Group charged with preparing the report entitled "The New Jersey Comparative Risk Project" for the State of New Jersey, Department of Environmental Protection, Division of Science, Research and Technology.
2002	Member of the National Monitoring Strategy Work Group and Regulatory Review Group for the EPA's Ambient Monitoring Technology Information Center.
2002	Peer Reviewer of the report entitled "The Development of an Air Toxics Monitoring Strategy for Michigan" prepared by the State of Michigan, Department of Environmental Quality, Air Quality Division.
2002–2008	Member, Illinois Health and Hazard Substances Coordinating Council, the State of Illinois, Department of Public Health
2004	Program Chair, Society for Risk Analysis Chicago Regional Chapter
2005	Secretary, Society for Risk Analysis Chicago Regional Chapter
2006	President-Elect, Society for Risk Analysis Chicago Regional Chapter
2006–2008	Member, International Society of Exposure Analysis and Environmental Epidemiology International Committee
2007	President, Society for Risk Analysis Chicago Regional Chapter

2007 Invited Speaker, Workshop on Environmental Health, Energy, and Transportation: Bringing Health to the Fuel Mixture, Sponsored by the Institute of Medicine's Roundtable on Environmental Health Sciences, Research, and Medicine, Washington, D.C., Nov 29-30

2009–Present Chair, International Society of Exposure Analysis and Environmental Epidemiology International Committee

2012 Invited Peer-Reviewer by the U.S. Environmental Protection Agency for the revised guidance on the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK Model)

2017 Invited Peer-Reviewer by the Ireland Environmental Protection Agency for grant program focusing on health risks of dental restoration materials.

Publications:

Peer-Reviewed Journal Publications:

Erdal, S. and N.A. Esmen. 1990. The Curvilinear Motion of Coarse Particles: New Thoughts on Theory and Applications. *Journal of Aerosol Science*. 21:431-440.

N.A. Esmen and S. **Erdal**. 1990. Human Occupational and Nonoccupational Exposure to Fibers. *Environmental Health Perspectives*. 88: 277-286.

Erdal, S. and N.A. Esmen. 1991. The Size of Fibrous Aerosols. *Applied Occupational and Environmental Hygiene.* 6:764-772.

Keimig, S.D., N.A. Esmen, S. **Erdal**, and E.B. Sansone. 1991. Solvent Desorption from Carbon Beds in Ducted and Nonducted Laboratory Hoods. *Applied Occupational and Environmental Hygiene.* 7:592 - 597.

Erdal, S. and N.A. Esmen. 1995. Human Head Model as an Aerosol Sampler: Calculation of Aspiration Efficiencies for Coarse Particles Using an Idealized Human Head Model Facing the Wind. *Journal of Aerosol Science,* 26 (2): 253-272.

Erdal, S., H. Gong, Jr., W.S. Linn, and R. Rykowsky. 1996. Projection of Health Benefits from Ambient Ozone Reduction Related to the use of Methyl Tertiary Butyl Ether (MTBE) in the Reformulated Gasoline Program. *Risk Analysis.* 17(6): 693-704.

Erdal, S. and B.D. Goldstein. 2000. Metyl tert-Butyl Ether as a Gasoline Oxygenate: Lessons for Environmental Public Policy. *Annual Reviews of Energy and the Environment.* 25:765-802.

Goldstein, B.D., **Erdal,** S., Burger, J., Faustman, E.M., Friendlander, B.R., Greenberg, M., Leschine, T.M., Powers, C.W., Waishwell, L. et al. 2000. Stakeholder Participation: Experience from the CRESP Program. *Environmental Epidemiology and Toxicology*. 2(2-3): 103-111.

Goldstein, B.D. and S. **Erdal**. 2001. MTBE Misclassified. *American Journal of Industrial Medicine*. 39:511-512.

Caudill, M.P., **Erdal**, S., Scheff, P. 2004. Temporal Trends of Ambient Concentrations in USEPA Region 5. *Proceedings of the Air and Waste Management Association's Annual Meeting and Exhibition*. 2893-2904.

Erdal, S. and S.N. Buchanan. 2005. A Quantitative Look at Fluorosis and Fluoride Exposure and Intake of Children using a Health Risk Assessment Approach. *Environmental Health Perspectives.* 113(1):111-117.

Davis, F.G., Williams, L., **Erdal**, S., and D.D. Bigner. 2006. Characterization of Work Exposures to a Subset of Known and Suspected Animal Neurocarcinogens using the National Occupational Health Survey (1980-1983). *International Journal of Environmental and Occupational Health.* 12(1):16-23.

Erdal, S. and L. Berman. 2006. Occupational Exposure Environment, Risk Factors, and Hazard Awareness of Metal Sculptors and Artist Welders in the U.S. Submitted to *International Journal of Environmental Health Research*. 5(1): 17-28.

Mucha, A.P., Hryhorczuk, D., Serdyuk, A., Nakonechny, J., Zvinchuk, A., **Erdal,** S., Caudill, M., Scheff, P., Lukyanova, E., Shkiryak – Nyzhnyk, Z., and N. Chislovska. 2006. Urinary 1-Hydroxypyrene as a Biomarker of PAH Exposure in Three-Year-Old Ukrainian Children. *Environmental Health Perspectives*. 114(4): 603-609.

Dorevitch S, **Erdal** S, Conroy LM, Schoonover T, Demirtas H, Persky V, and PA Scheff. 2006. Demolition of high-rise public housing increases particulate matter air pollution in communities of high-risk asthmatics. *Air and Waste Management Association Journal*. 56(7): 1022-1032.

Erdal, S. and A. Carolla. 2007. Assessment of the Health Protectiveness of the Risk-Based Soil Remediation Standards of the Midwestern States. *Human and Ecological Risk Assessment*. 13(3): 543-573.

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Pagone, F., Smith, J., **Erdal, S.** 2016. Comparison of Perceived Environmental Risk and Modeled Environmental and Occupational Health in Southeastern Cook County, IL, Presented at the American Industrial Hygiene Association Annual Conference and Exposition, Baltimore, MD, May 21-26.

APPENDIX B

M/W/EBE Participation Compliance Forms and Documentation

Exhibit G

M/W/EBE PARTICIPATION COMPLIANCE FORM

I do hereby certify that

AFC International Inc. (Name of firm) intends to participate as a Subcontractor or General Contractor on the project referenced above.

This firm is a (check only one):

_____ Minority Business Enterprise (MBE), a firm that is at least 51% managed and controlled by a minority, certified by a certifying agency within Illinois.

X Women's Business Enterprise (WBE), a firm that is at least 51% managed and controlled by a woman, certified by a certifying agency within Illinois.

_____ Evanston Based Enterprise (EBE), a firm located in Evanston for a minimum of one year and which performs a "commercially useful function".

Total proposed price of response $ 246,100

Amount to be performed by a M/W/EBE $ 50,235.34

Percentage of work to be performed by a M/W/EBE 20 %

Information on the M/W/EBE Utilized:

Name AFC International Inc.

Address 715C SW Almond St., DeMotte, IN 46310

Phone Number 1-800-952-3293

Signature of firm attesting to participation [signature]

Title and Date 12-18-18 President

Please attach

1. Proper certification documentation if applying as a M/WBE and check the appropriate box below. This M/WBE will be applying with documentation from:

☐ Cook County	☐ State Certification
☐ Federal Certification	☒ Women's Business Enterprise National Council
☐ City of Chicago	☐ Chicago Minority Supplier Development Council

2. Attach business license if applying as an EBE

WBENC

WOMEN'S BUSINESS ENTERPRISE NATIONAL COUNCIL

JOIN FORCES. SUCCEED TOGETHER.

hereby grants

National Women's Business Enterprise Certification

to

AFC International, Inc.

who has successfully met WBENC's standards as a Women's Business Enterprise (WBE).
This certification affirms the business is woman-owned, operated and controlled; and is valid through the date herein.

WBENC National WBE Certification was processed and validated by
Great Lakes Women's Business Council, a WBENC Regional Partner Organization.

Certification Granted: July 29, 2009
Expiration Date: July 29, 2019
WBENC National Certification Number: 2005113418

Authorized by Michelle Richards, President
Great Lakes Women's Business Council

Great Lakes Women's Business COUNCIL
Accelerating business growth

NAICS: 334519, 339113, 423450, 423690, 424690, 541690
UNSPSC: 26131701, 41103310, 41113100, 41113110, 41113116, 41113118, 41115600, 46171613, 46182000, 46182002, 46182005

WBENC

WOMEN'S BUSINESS ENTERPRISE NATIONAL COUNCIL

JOIN FORCES. SUCCEED TOGETHER.

HEREBY GRANTS
WOMAN OWNED SMALL BUSINESS (WOSB) CERTIFICATION TO

AFC International, Inc.

The identified small business is an eligible WOSB for the WOSB Program, as set forth in 13 C.F.R. part 127 and has been certified as such by an SBA approved Third Party Certifier pursuant to the Third Party Agreement, dated June 30, 2011, and available at www.sba.gov/wosb.

The WOSB Certification expires on the date herein unless there is a change in the SBA's regulation that makes the WOSB ineligible or there is a change in the WOSB that makes the WOSB ineligible. If either occurs, this WOSB Certification is immediately invalid. The WOSB must not misrepresent its certification status to any other party, including any local or State government or contracting official or the Federal government or any of its contracting officials.

NAICS: 334513, 423450, 423690, 424690, 541690 UNSPSC: 26131701, 41103310, 41113100, 41113110, 41113118, 41115600, 46171613, 46182002, 46182005
Certification Number: W070029
Expiration Date: July 29, 2018

Great Lakes Women's Business COUNCIL
Accelerating business growth

Michelle Richards, Great Lakes Women's Business Council President

Pamela Prince-Eason, WBENC President & CEO

Candace Waterman, WBENC Vice President

Exhibit G

M/W/EBE PARTICIPATION COMPLIANCE FORM

I do hereby certify that

WindSoleil (Name of firm) intends to participate as a Subcontractor or General Contractor on the project referenced above.

This firm is a (check only one):

_____ Minority Business Enterprise (MBE), a firm that is at least 51% managed and controlled by a minority, certified by a certifying agency within Illinois.

_____ Women's Business Enterprise (WBE), a firm that is at least 51% managed and controlled by a woman, certified by a certifying agency within Illinois.

__X__ Evanston Based Enterprise (EBE), a firm located in Evanston for a minimum of one year and which performs a "commercially useful function".

Total proposed price of response $ 246,100

Amount to be performed by a M/W/EBE $ 14,151.00

Percentage of work to be performed by a M/W/EBE 6 %

Information on the M/W/EBE Utilized:

Name WindSoleil

Address 1715 Emerson St., Evanston, IL 60201

Phone Number 1-888-944-5765

Signature of firm attesting to participation [signature]

Title and Date 12/20/2018

Please attach

1. Proper certification documentation if applying as a M/WBE and check the appropriate box below. This M/WBE will be applying with documentation from:

   ❑ Cook County ❒ State Certification
   ❒ Federal Certification ❒ Women's Business Enterprise National Council
   ❒ City of Chicago ❒ Chicago Minority Supplier Development Council

2. Attach business license if applying as an EBE (Attached)

Verify that all of your Illinois Business Authorization information is correct.

- **If not**, contact us immediately.
- **If yes**, cut along the dotted line (fits a standard 5 x 7" frame). Your authorization must be visibly displayed at the address listed. ***Do not discard*** - your Illinois Business Authorization is an important tax document that provides you the authorization to legally do business in Illinois.

Illinois Business Authorization

WINDSOLEIL INCORPORATED

DBA: WINDSOLEIL

1715 EMERSON ST FL 2
EVANSTON IL 60201-3460

Loc. Code: 016-0018-4-001
Evanston
Cook County

Certificate of Registration

Expiration Date:
2/8/2021

Sales and use taxes and fees (4208-5454)

Director
DEPARTMENT OF REVENUE

Issued Date: 02/09/2016

IDOR-50-A (R-10/15)
IL-492-4163

P-000227

APPENDIX C

Required RFP Exhibits

Exhibit A – Disclosure of Ownership Interests
Exhibit B – Additional Information Sheet
Exhibit C – Conflict of Interest Form
Exhibit D – Acknowledgement of Understanding
Exhibit E – Anti-Collusion Affidavit and Proposer's Certification
Exhibit J – Professional Service Agreement Acknowledgement Page

Exhibit A

DISCLOSURE OF OWNERSHIP INTERESTS

The City of Evanston Code Section 1-18-1 *et seq.* requires all persons (APPLICANT) seeking to do business with the City to provide the following information with their proposal. Every question must be answered. If the question is not applicable, answer with "NA".

APPLICANT NAME: RHP Risk Management Inc.

APPLICANT ADDRESS: 8745 W. Higgins Rd. Suite 320, Chicago, IL 60631

TELEPHONE NUMBER: +1-773-867-6001

FAX NUMBER: NA

APPLICANT is (**Check One**)
(X) Corporation
( ) Partnership
( ) Sole Owner
( ) Association

Other ( ) _____

Please answer the following questions on a separate attached sheet if necessary.

SECTION I - CORPORATION

1a. Names and addresses of all Officers and Directors of Corporation.

Jacob Persky - 8745 W. Higgins Rd., Suite 320, Chicago, IL 60631

Ben Heckman - 17 West South St. Carlisle, PA 17013

Tracie Rose - 8745 W. Higgins Rd., Suite 320, Chicago, IL 60631

1b. **(Answer only if corporation has 33 or more shareholders.)**
Names and addresses of all those shareholders owning shares equal to or in excess of 3% of the proportionate ownership interest and the percentage of shareholder interest. (Note: Corporations which submit S.E.C. form 10K may substitute that statement for the material required herein.)

NA

1c. **(Answer only if corporation has fewer than 33 shareholders.)**
Names and addresses of all shareholders and percentage of interest of each herein. (Note: Corporations which submit S.E.C. form 10K may substitute that statement for the material requested herein.)

NA

SECTION 2 - PARTNERSHIP/ASSOCIATION/JOINT VENTURE

2a. The name, address, and percentage of interest of each partner whose interests therein, whether limited or general, is equal to or in excess of 3%.

Jacob Persky - 8745 W. Higgins Rd., Suite 320, Chicago, IL 60631	33%
Ben Heckman - 17 West South St. Carlisle, PA 17013	33%
Tracie Rose - 8745 W. Higgins Rd., Suite 320, Chicago, IL 60631	33%

2b. Associations: The name and address of all officers, directors, and other members with 3% or greater interest.

(SAME)

SECTION 3 - TRUSTS

3a. Trust number and institution.

NA

3b. Name and address of trustee or estate administrator.

NA

3c. Trust or estate beneficiaries: Name, address, and percentage of interest in total entity.

NA

SECTION 4 - ALL APPLICANTS - ADDITIONAL DISCLOSURE

4a. Specify which, if any, interests disclosed in Section 1, 2, or 3 are being held by an agent or nominee, and give the name and address of principal.

NA

4b. If any interest named in Section 1,2, or 3 is being held by a "holding" corporation or other "holding" entity not an individual, state the names and addresses of all parties holding more than a 3% interest in that "holding" corporation or entity as required in 1(a), 1(b), 1(c), 2(a), and 2(b).

NA

4c. If "constructive control" of any interest named in Sections 1,2, 3, or 4 is held by another party, give name and address of party with constructive control. ("Constructive control" refers to control established through voting trusts, proxies, or special terms of venture of partnership agreements.)

NA

I have not withheld disclosure of any interest known to me. Information provided is accurate and current.

12/21/2018
Date

Signature of Person Preparing Statement

President
Title

ATTEST: Lisa Johnson
Notary Public

Commission Expires: 9/17/22

(Notary Seal)

"OFFICIAL SEAL"
LISA JOHNSON
Notary Public, State of Illinois
My Commission Expires 9/17/2022

EXHIBIT B

ADDITIONAL INFORMATION SHEET

Proposal Name: Environmental Monitoring Study - Waste Transfer Station

Proposal Number #: 18-57

Company Name: RHP Risk Management Inc.

Contact Name: Jacob Persky

Address: 8745 W. Higgins Rd. Suite 320

City,State, Zip: Chicago, IL 60631

Telephone/FAX: # +1-773-867-6001

E-mail: jpersky@rhprisk.com

Comments: Should you have any questions or need any additional information, please contact Jacob Persky at +1-773-867-6001 or by e-mail at jpersky@rhprisk.com.

Exhibit C

CONFLICT OF INTEREST FORM

RHP Risk Management Inc., hereby certifies that it has conducted an investigation into whether an actual or potential conflict of interest exists between the bidder, its owners and employees and any official or employee of the City of Evanston.

Proposer further certifies that it has disclosed any such actual or potential conflict of interest and acknowledges if bidder/Proposer has not disclosed any actual or potential conflict of interest, the City of Evanston may disqualify the bid/proposal.

Jacob Persky

(Name of Bidder/Proposer if the Bidder/Proposer is an Individual)
(Name of Partner if the Bidder/Proposer is a Partnership)
(Name of Officer if the Bidder/Proposer is a Corporation)

The above statements must be subscribed and sworn to before a notary public. Subscribed and Sworn to this 21st day of December, 2018

"OFFICIAL SEAL"
LISA JOHNSON
Notary Public, State of Illinois
My Commission Expires 9/17/2022

Notary Public

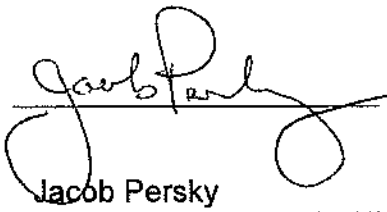
Failure to complete and return this form may be considered sufficient reason for rejection of the bid / proposal.

Exhibit D

ACKNOWLEDGEMENT OF UNDERSTANDING

THE SECTION BELOW MUST BE COMPLETED IN FULL AND SIGNED

The undersigned hereby certifies that they have read and understand the contents of this solicitation and attached service agreements, and agree to furnish at the prices shown any or all of the items above, subject to all instructions, conditions, specifications and attachments hereto. Failure to have read all the provisions of this solicitation shall not be cause to alter any resulting contract or to accept any request for additional compensation. By signing this document, the Proposer hereby certifies that they are not barred from bidding on this contract as a result of bid rigging or bid rotating or any similar offense (720 ILCS S/33E-3, 33E-4).

Authorized Signature: 

Company Name: RHP Risk Management Inc.

Typed/Printed Name: Jacob Persky

Date: 12/21/2018

Title: President

Telephone Number: +1-773-867-6001

Email: jpersky@rhprisk.com

Fax Number: N/A

Exhibit E

ANTI-COLLUSION AFFIDAVIT AND PROPOSER'S CERTIFICATION

Jacob Persky, being first duly sworn,
deposes and says that he is Owner
(Partner, Officer, Owner, Etc.)
of RHP Risk Management Inc.
(Proposer)

The party making the foregoing proposal or bid, that such bid is genuine and not collusive, or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference with any person; to fix the bid price element of said bid, or of that of any other bidder, or to secure any advantage against any other bidder or any person interested in the proposed contract.
The undersigned certifies that he is not barred from bidding on this contract as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid-rotating.

Jacob Persky
(Name of Bidder if the Bidder is an Individual)
(Name of Partner if the Bidder is a Partnership)
(Name of Officer if the Bidder is a Corporation)

The above statements must be subscribed a sworn to before a notary public.

Subscribed and Sworn to this 21st day of December, 2018

Notary Public

"OFFICIAL SEAL"
LISA JOHNSON
Notary Public, State of Illinois
My Commission Expires 9/17/2022

Commission Expires:

Failure to complete and return this form may be considered sufficient reason for rejection of the bid.

Exhibit J

Professional Services Agreement Acknowledgement Page

The City has attached its standard professional services agreement as an exhibit to this RFP. Identify all exceptions to the agreement that would prevent your firm from executing it. **The City shall not consider or negotiate regarding exceptions submitted at any time after the submission of the Proposer's response.** *Please check one of the following statements:*

__X__ I have read the professional services agreement and plan on executing the agreement without any exceptions.

_____My firm cannot execute the City's standard professional service agreement unless the exceptions noted below or in the attached sample professional services agreement are made.

*****Please be aware that submitting exceptions to the contract may impact the likelihood of your firm being selected to perform this work.**

List exceptions in the area below:

_____

_____

_____

_____

_____

_____

_____

_____

Authorized Signature: _____ **Company Name:** RHP Risk Management Inc.

Typed/Printed Name and Title: Jacob Persky **Date:** 12/21/2018