



## A. Michael Ierardi, MES, MS

### Current Position

Senior Health Scientist  
& Regional Unit  
Manager

### Discipline Areas

- > Industrial Hygiene & Safety
- > Exposure Science
- > Human Health Risk Assessment
- > Environmental Health

### Years' Experience

6

### Joined Cardno

2014

### Education

- > MS, Industrial Hygiene, CUNY Graduate School of Public Health & Health Policy, 2020
- > MES, Environmental Health, University of Pennsylvania, 2014
- > BA, Environmental Studies and Hispanic Studies, University of Pennsylvania, 2013

### Summary of Experience

Mr. A. Michael Ierardi is a Senior Health Scientist and Regional Unit Manager with Cardno ChemRisk in the Brooklyn office. His principal areas of interest and training include industrial hygiene and safety, exposure science, human health risk assessment, and environmental health. At Cardno ChemRisk, Mr. Ierardi provides on-site industrial hygiene support and sampling; manages and provides litigation support for cases related to occupational and environmental exposures to various agents, including asbestos and talc; conducts numerous exposure assessments and dose reconstructions for a variety of chemicals in a diverse array of occupational settings; and routinely assists clients with risk management and risk communication strategies.

Mr. Ierardi graduated from the University of Pennsylvania with a Bachelor of Arts degree in Environmental Studies and Hispanic Studies in 2013, as well as with a Master of Environmental Studies degree, with a concentration in Environmental Health, in 2014. He also graduated with a Master of Science degree in Industrial Hygiene from the CUNY Graduate School of Public Health & Health Policy in 2020.

### Significant Projects

#### Industrial Hygiene, Safety, & Exposure Assessment

Conducted a focused risk assessment of various options for audiometric testing of workers at U.S.-based production sites for a multi-national food and beverage corporation with the primary objective of assessing how to best protect employees during the COVID-19 pandemic while transitioning to normal business operations and simultaneously remaining compliant with annual audiometric testing requirements set forth by OSHA under 29 CFR 1910.95.

Responded to the COVID-19 pandemic by creating and implementing emergency response health and safety programs and protocols for an international digital media and broadcasting company.

Designed and implemented a heat stress and indoor air quality sampling program for New York City public school kitchens to assess potential risk of heat-related illness and/or acute injury.

Assisted with baseline exposure assessments of employees at crude oil and gas refineries in the U.S., which included walk-throughs of various units at the facilities, full-shift personal noise and VOC air monitoring, comprehensive employee interviews, and designation of employees into task-based similar exposure groups (SEGs).

Performed active and passive sampling of formaldehyde emissions associated with compressed wood flooring products in a residential setting.

Provided five weeks of on-site industrial hygiene support to advise on technical issues, assist with data entry, and communicate through supply chain to obtain product hazard information in order to assemble GHS compliant safety data sheets (SDS) for an adhesives and epoxy manufacturer. Used ChemGes authoring software to draft and

review SDS. Created and maintained an internal SDS management database to track revisions and communication with suppliers.

Authored a proposal and performed a human health exposure assessment for cadmium associated with the typical handling and use of cylinder saws. Conducted product sampling to assess potential cadmium exposure via dermal absorption, which was ultimately used to determine compliance with Proposition 65 consumer product regulations.

#### Human Health Risk Assessment

Conducted screening-level risk assessments for a variety of chemicals, including methyl tertiary butyl ether (MTBE), methyl isobutyl ketone (MIBK), isobutanol, isodecanol, isooctonal (isooctyl alcohol), isopropanol (IPA), methyl isobutyl carbinol (MIBC), calcium chloride solution, calcium nitrate, calcium ammonium nitrate, urea ammonia nitrate solution, propylene glycol methyl ether (PGME), hydrotreated heavy paraffinic petroleum distillates, 1-decene, diethylene glycol (DEG), calcium lignosulfonate, 1,4-butanediol, Kymene, lauryl-cetyl alcohol, diesel renewable HVO, ammonium sulfate solution, EGME, urean, 2-BOE, Ethanol Mix, general allergens, fish oil, phenol, acrylonitrile, and orthoxylene in order to establish acceptable levels of residual chemical substances that may be present in trace amounts in aqueous 85% food grade phosphoric acid, and for the detection of any unexpected residual odor during occupational use of concentrated phosphoric acid in food processing and manufacturing. Reviewed and summarized relevant toxicological literature to compile chemical toxicity profiles to assess human health hazard.

Assisted with a human health risk assessment involving exposure to a coal ash product used as a daily cover for landfill. Compiled data characterizing the heavy metal content of the coal ash product and background levels of heavy metals in soils. Compared this heavy metals data to the U.S. Environmental Protection Agency (USEPA) Regional Soil Screening Levels and analyzed the data under multiple exposure scenarios.

Performed food safety risk assessments for cumene, naphthalene, and 1,3-pentadiene present in various food products such as salad dressing, cashews, and a children's flavored-water product to ascertain any potential health risks to consumers upon ingestion of these products.

#### Epidemiology

Conducted a comprehensive literature search to identify health effect estimates in epidemiological studies that evaluated the potential for cardiovascular effects following glyphosate exposure in various occupational cohorts, including farmers and pesticide applicators.

Performed a series of statistical power analyses, a time since first employment/latency analysis, and a confidence interval function analysis for various international cohorts of cosmetic talc miners and millers in order to elucidate the potential risk of mesothelioma among these workers.

#### Toxicology

Assessed allergenicity risk associated with the oils of various fish species among consumers who ingested a dietary supplement product.

Derived an updated chronic oral reference dose (RfD) for antimony based on a comprehensive literature search of peer-reviewed animal toxicity studies of antimony and associated compounds that have been published since 1987, when the USEPA published the current chronic oral RfD for antimony.

Drafted and reviewed comprehensive toxicological profiles for propylene glycol, ethyl acetate, monomenthyl succinate, 4-(P-Hydroxyphenyl)-2-butanone, beta-Ionone, butyric acid, geranyl acetate, glycidol, methyl heptenone, acetic acid, ethyl lactate, raspberry ketone, allyl hexanoate, and neryl acetate. Assisted with the creation of an online database by summarizing *in vitro* and *in vivo* studies that assess potential toxicity of liquids and aerosols associated with electronic cigarettes (e-cigarettes) for FDA submission of Premarket Tobacco Applications (PMTAs).

#### Litigation Support

Managed and/or provided litigation support for expert witness testimony by reviewing and summarizing case materials regarding occupational and non-occupational exposures to asbestos-, benzene-, talc-, and diacetyl-containing products.

Managed and provided litigation support for cases involving consumer exposures to cosmetic talcum powder products and occupational exposures to industrial talc. Reviewed and summarized literature regarding consumer exposures to cosmetic talcum products and occupational exposures to industrial talc to perform retrospective exposure assessments of these products under multiple-use scenarios.

Compiled state-of-the-art knowledge regarding OSHA respirator use requirements associated with the handling and manipulation of asbestos-containing products; the use of asbestos-containing components used on military aircrafts; and the use of anthophyllite asbestos-containing plastic pipe in chemical manufacturing facilities.

Reviewed literature and summarized exposure data associated with the use of different types of asbestos-containing dental products, including casting ring liner (dental tape) and periodontal dressing powder, in order to characterize potential exposures of dentists, dental technicians, and others who have historically used these products in occupational settings.

Managed and provided litigation support for a medical monitoring case involving the removal of amosite-containing ceiling tiles. Reviewed and summarized literature regarding ceiling tile removal and installation data in order to perform a wide-scale exposure reconstruction for multiple individuals.

Provided litigation support for a case involving an industrial welding accident at a metal scrap and recycling company. Interpreted and assessed the applicability of OSHA regulations under this scenario.

Managed and provided litigation support for cases involving potential asbestos exposure associated with automotive, heavy-duty equipment, and forklift friction materials, including brakes and manual clutches. Reviewed asbestos literature related to brake and clutch handling and manipulation, industrial hygiene and epidemiological data for mechanics, government regulations, and case-specific materials for the preparation of reports for use in expert testimony.

Reviewed and organized corporate documents related to supply chain processes, industrial hygiene data, health and safety practices, and state-of-the-science knowledge regarding the production and use of vermiculite-containing consumer products. Managed and delegated project research tasks that were incorporated into client deliverables and internal resources.

#### Environmental Health

Assessed childhood risk of exposure to heavy metals surrounding a Superfund site in New Jersey and evaluated associated rates of autism spectrum disorder in the population.

Performed research at the University of Pennsylvania's Perelman School of Medicine to compile major health disparities and environmental exposures among the population in Chester, Pennsylvania, as a causal map, such that public health intervention programs could be implemented.

Contributed to USEPA's management of information related to Marcellus Shale development through the creation and administration of an online information repository for analytic results of wastewater generated during the hydraulic fracturing process.

#### Certifications

- > Adult and Child CPR/First Aid/AED Certified, Red Cross, 2019 to Present
- > ManageMentor Supervisor Training, Harvard University, 2019
- > 30-hour Construction Safety and Health Training, OSHA, 2019 to Present
- > 40-hour HAZWOPER Training, OSHA, 2014 to Present

#### Professional Honors/Awards

- > Best Student Poster Awards from the Ergonomics Committee, the Minority Special Interest Group, and the Social Concerns Committee, AIHA, 2020
- > Dean's Merit Award for Service, CUNY Graduate School of Public Health & Health Policy, 2020
- > Five-Year Service Award, Cardno, 2019
- > Going the Extra Mile Award, Cardno, 2019
- > Dr. Morton Lippmann Scholarship, AIHA, 2018
- > AIHF General Scholarship, AIHA, 2018
- > ERC Industrial Hygiene Scholarship, NIOSH, 2017 to 2020
- > Gold Star Award, Cardno, 2014, 2016, 2019, & 2020
- > Gerdau Scholarship, Gerdau Ameristeel, 2013
- > Elaine B. Wright Award in Environmental Studies, University of Pennsylvania, 2013

#### Membership and Service to Professional Societies

- > American Conference of Governmental Industrial Hygienists (ACGIH), Member, 2018 to Present
- > Society of Toxicology (SOT), Associate Member, 2017 to Present
  - Mid-Atlantic Regional Chapter Member, 2017 to Present
  - Occupational and Public Health Specialty Section Member, 2017 to Present

- > American Industrial Hygiene Association (AIHA), Member, 2014 to Present
  - Occupational and Environmental Epidemiology Committee Member, 2019 to Present
  - CUNY Graduate School of Public Health & Health Policy Student Section Member, 2017 to 2020
    - President, 2018 to 2019
  - Metro New York Chapter Member, 2015 to Present

#### Publications

- > Ierardi, A.M. and G. Marsh. Absence of mesothelioma risk maintained in an expanded international cohort of cosmetic talc miners and millers. *Inhal Toxicol.* 32(6):257-264.
- > Marsh, G. and A.M. Ierardi. 2020. Confidence interval function analysis to evaluate the risk of mesothelioma among an expanded international cohort of cosmetic talc miners and millers. *Regul Toxicol Pharmacol.* 115:104696.
- > Ierardi, A.M. and B. Pavidonis. 2020. Heat stress risk among New York City public school kitchen workers: a quantitative exposure assessment. *J Occup Environ Hyg.* 17:1-11.
- > Marsh, G., A.M. Ierardi, S. Benson, and B. Finley. 2019. Response to letters regarding “Occupational exposures to cosmetic talc and risk of mesothelioma: an updated pooled cohort and statistical power analysis with consideration of latency period.” *Inhal Toxicol.* 31(11-12):387-391.
- > Marsh, G., A.M. Ierardi, S. Benson, and B. Finley. 2019. Occupational exposures to cosmetic talc and risk of mesothelioma: An updated pooled cohort and statistical power analysis with consideration of latency period. *Inhal Toxicol.* 31(6):213-223.

#### Invited Lectures

- > Ierardi, A.M. Asbestos and Silica Hazards and Exposure Measurements. Online Recorded Lecture for Principles of Industrial Hygiene Course at CUNY Graduate School of Public Health & Health Policy, Fall, 2019. New York, New York.
- > Ierardi, A.M. Thermal (Heat & Cold) Stress. Lecture for Noise and Radiation Course at CUNY Graduate School of Public Health & Health Policy, September 17, 2019. New York, New York.
- > Ierardi, A.M. Asbestos and Silica Hazards and Exposure Measurements. Lecture for Principles of Industrial Hygiene Course at CUNY Graduate School of Public Health & Health Policy, April 2, 2019. New York, New York.

### Invited Presentations

- > Ierardi, A.M. An Overview of FDA's Cosmetic Talc Analytical Findings from 1971 to Present. Webinar Presentation at the Cardno ChemRisk Science Seminar, July 22, 2020. Virtual.
- > Ierardi, A.M. Characterization of Asbestos Exposures from Dental Products. Oral Presentation at the Cardno ChemRisk Science Seminar, November 13, 2019. Boston, Massachusetts.
- > Ierardi, A.M. The Epidemiology of Cosmetic Talc. Oral Presentation at the Defense Research Institute's (DRI) Talc Science Seminar, September 20, 2019. Washington, DC.
- > Ierardi, A.M. Fibrous Talc as a Risk Factor for Mesothelioma: New Allegations and a Weight of Evidence Review. Oral Presentation at the Cardno ChemRisk Science Seminar, June 26, 2019. New Orleans, Louisiana.
- > Ierardi, A.M. Cosmetic Talc, Taconite, and Gold: Analysis of Non-asbestiform Exposures in Miner Cohorts. Oral Presentation at the Cardno ChemRisk Science Seminar, November 7, 2018. Austin, Texas.
- > Ierardi, A.M. Cosmetic Talc, Taconite, and Gold: Analysis of Non-asbestiform Exposures in Miner Cohorts. Oral Presentation at the Cardno ChemRisk Science Seminar, June 27, 2018. Nashville, Tennessee.

### Poster Presentations

- > Ierardi, A.M. and B. Pavilonis. Heat stress risk among New York City public school kitchen workers: a quantitative exposure assessment. Abstract #1668. Student Poster Presentation at the American Industrial Hygiene Association's (AIHA) Annual Meeting, June 1-3, 2020. Atlanta, Georgia (Virtual).
  - Best Student Poster Awards from the Ergonomics Committee, the Minority Special Interest Group, and the Social Concerns Committee
- > Ierardi, A.M., A. Urban, N. Jacobs, C. McMenemy, B. Finley, and S. Gaffney. Characterization of Airborne Asbestos Exposures from the Use of Dental Products: A Comprehensive Review. Abstract #238. Poster Presentation at the American Industrial Hygiene Association's (AIHA) Annual Meeting, May 20-23, 2019. Minneapolis, Minnesota.
- > Shay Hynds, E., A.M. Ierardi, A. Burns, and B. Finley. Derivation of a Chronic Oral RfD for Antimony. Abstract #3448. Poster Presentation at the Society of Toxicology's (SOT) Annual Meeting, March 11-15, 2018. San Antonio, Texas.
- > Ierardi, A.M., A. Chapman, A. Monnot, A. Hicks, and J. Keenan. Relative Oral Bioavailability of Metals in Coal Fly Ash. Abstract #3537. Poster Presentation at the Society of Toxicology's (SOT) Annual Meeting, March 11-15, 2018. San Antonio, Texas.

- > Jacobs, N., J. Lotter, and A.M. Ierardi. Assessment of Potential Tremolite Exposures from Historical Vermiculite-Containing Consumer Products. Abstract #3651. Poster Presentation at the Society of Toxicology's (SOT) Annual Meeting, March 14-18, 2016. New Orleans, Louisiana.
  
- > Trusty, C., A.M. Ierardi, and B. Tvermoes. Surveillance in Trends of Foodborne Illnesses Based on Assessment of Food Safety Lawsuits. Abstract #3792. Poster Presentation at the Society of Toxicology's (SOT) Annual Meeting, March 14-18, 2016. New Orleans, Louisiana.