

# Biographical Summary

## Peter J. Drivas, Ph.D., Principal Consultant

Dr. Drivas has over 20 years of experience in the fields of air quality modeling, pesticide drift, reactive chemical modeling, hazardous spill assessments, and indoor air pollution. He has managed numerous air quality and multimedia modeling programs; has been an expert witness on air quality modeling; and has developed many innovative environmental models, which can predict ozone and photochemical smog formation, soil gas infiltration from buried liquid chemicals into houses, evaporation from oil spills, and the consequences of hazardous spills of toxic materials. He is an expert on numerous agency-approved and industry standard models, including ISC, CALPUFF, AERMOD, RPM-IV, PLUVUE-II, and others. He has published two books and over 30 technical articles in the environmental field.

## Representative Projects

**Modeling Airborne Exposures Due to Pesticide Applications and Drift from a Fruit Farm, Puerto Rico:** Used the ISC air dispersion model to evaluate multiple pathway risks using site-specific data obtained through atmospheric and surface deposition monitoring.

**Air Modeling of Lead Releases from a Battery Manufacturer:** "Reconstructed" historical human lead exposures, including direct and indirect pathways, such as lead uptake by cows grazing on the plaintiffs' property. Provided expert testimony on air emissions and dispersion modeling. The case settled for a small fraction of the original demand.

**Modeling Tarry NAPLs for Dose Reconstruction, Texas:** Provided expert testimony on past community exposures to benzene, vinyl chloride, trichloroethylene and other solvents at a Superfund site. Gradient developed an air model to estimate chemical emissions from buried tarry NAPL deposits. The case settled in favor of our client, with the jury rejecting the plaintiffs' claims.

**Indoor Asbestos Model:** Developed an indoor air dispersion model that predicted the concentration of asbestos fibers from a short-term, point source release. The model was implemented on a laptop computer and results presented to the courtroom audience in real time.

**Indoor Air in a Municipal Building:** Analyzed the exposure of city employees to gasoline vapors claimed to result from leaking underground storage tanks. Designed and performed an indoor air tracer study to evaluate whether indoor sources contributed to measured VOCs inside the building.



## Practice Areas & Expertise

- Air Quality Modeling
- Emission Source Characterization
- Soil-Gas Modeling
- Chemical Engineering Processes
- Accidental Releases

## Education

Ph.D., Chemical Engineering, California Institute of Technology

M.S., Chemical Engineering, Massachusetts Institute of Technology

B.S., Chemical Engineering, Massachusetts Institute of Technology

## Selected Publications

Brody, JG; Vorhees, DJ; Melly, SJ; Swedis, SR; Drivas, PJ; Rudel, RA. 2002. "Using GIS and historical records to reconstruct residential exposure to large-scale pesticide application." *J. Expo. Anal. Environ. Epidemiol.* 12:64-80.

Drivas, PJ; Valberg, PA; Murphy, BL; Wilson, R. 1996. "Modeling indoor air exposure from short-term point source releases." *Indoor Air* 6:271-277.

Valberg, PA; Drivas, PJ; McCarthy, SM; Watson, AY. 1996. "Evaluating the health impacts of incinerator emissions." *J. Hazardous Materials* 47:205-227.

Hanna, SR; Drivas, PJ; Chang, JC. 1996. "Guidelines for Use of Source Emissions and Atmospheric Dispersion Models for Accidental Releases. Center for Chemical Process Safety." American Institute of Chemical Engineers, New York.

Drivas, PJ. 1995. "A review of source emission models for accidental releases. Paper No. 95-TP54A.03." In *Proceedings in The 88th Annual Meeting of the Air and Waste Management Association, San Antonio, TX, June 19-23.*

Hanna, SR; Drivas, PJ. 1993. "Modeling VOC emissions and air concentrations from the Exxon Valdez oil spill." *J. of the Air and Waste Management Assoc.* 43:298-309



20 University Road  
Cambridge, MA 02138  
Phone (617) 395-5000  
Fax (617) 395-5001

[pdrivas@gradientcorp.com](mailto:pdrivas@gradientcorp.com)  
[www.gradientcorp.com](http://www.gradientcorp.com)