

MICHAEL A. JAYJOCK, PhD, CIH

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EDUCATION

Doctor of Philosophy in Environmental Engineering, 1984
Drexel University, Philadelphia, Pennsylvania

Master of Science in Environmental Engineering, 1981
Drexel University, Philadelphia, Pennsylvania

Bachelor of Science in Secondary Education, 1968
The Pennsylvania State University, State College, Pennsylvania

PROFESSIONAL CERTIFICATION

American Board of Industrial Hygiene, Certified Industrial Hygienist # 6186 –
Comprehensive Practice

PROFESSIONAL EXPERIENCE

Sole Proprietor, Jayjock Associates, LLC. 2010-

<http://www.jayjock-associates.com/>

Work with clients to:

- Develop, conduct and manage exposure assessment and mathematical modeling projects
- Develop and document exposure limit recommendations
- Develop and teach short courses, presentations and seminars in exposure assessment, mathematical modeling and risk assessment
- Provide litigation support vis-à-vis expert witness services
- Provide long term personal education and mentoring on the above subjects to in-house junior professionals

Senior Analyst, The LifeLine Group, Inc. 2004-2017

- Responsible for estimating human health risks from exposure to chemical agents including chemical products, reactants and intermediates.
- Responsible for the Quality Assurance and Quality Control of LifeLine Group work products.

Senior Analyst, LINEA, Inc. 2004-2011

Responsible for estimating human health risks from exposure to chemical agents reactants and intermediates, including:

- Develop, conduct and manage exposure assessment and mathematical modeling projects
- Develop and document exposure limit recommendations
- Develop and teach short courses, presentations and seminars in exposure assessment, mathematical modeling and risk assessment
- Litigation support vis à vis expert witness services

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Senior Research and EHS Fellow and Manager, Risk Assessment, Rohm and Haas Company, 1995-2003.

- Developed, conducted and managed project work for exposure/risk assessment and mathematical modeling projects.
- Trained, supervised and managed 3 subordinates.
- Developed and managed an inhalation and dermal exposure research laboratory.
- Served as internal expert on exposure/risk assessment and epidemiology including the establishment of occupational exposure limits (OELs) and emergency response planning guidelines (ERPGs).
- Represented the Rohm and Haas Company within scientific venues such as the U.S. EPA Science Advisory Board and the Long Range Research Initiative of the American Chemistry Council.
- Developed and delivered courses and presentations on exposure assessment, mathematical modeling and uncertainty.

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Technical Fellow and Manager of Risk Assessment, Rohm and Haas Company 1990-1995

- Developed, conducted and managed project work for exposure/risk assessment and mathematical modeling projects.
- Served as internal expert on exposure/risk assessment and epidemiology including the establishment of occupational exposure limits.
- Represented the Rohm and Haas Company within scientific venues such as the American Industrial Hygiene Association and the American Chemistry Council.

Senior Product Safety Engineer, The Rohm and Haas Company 1984 – 1990

- Advised the business on regulatory issues.
- Served as internal expert on exposure/risk assessment and epidemiology.

Scientist, Rohm and Haas Company 1983-1984

- Operated laboratory synthesis and testing equipment and reported test results.

Group Leader, Rohm and Haas Company, 1979-1984

- Management the operations of the Physical Testing Laboratory including direct supervision of 15 subordinates and the physical plant.
- Coordinate industrial hygiene activity for entire Plastics Engineering Laboratory complex.

Plastics Engineer, Rohm and Haas Company, 1969-1979

- Technical sales service and project management.
- Research and development of adhesives and color matching patches of plastics.
- Coordinate industrial hygiene activity for entire Plastics Engineering Laboratory complex.

HONORS

- American Industrial Hygiene Edward J. Baier Award for significant contribution to industrial hygiene in recent years through technical expertise, technological innovations, research and scientific advancements in the field of industrial hygiene, and interaction with or influence on other scientific disciplines. 2019
- American Industrial Hygiene Association Distinguished Service Award for Outstanding Contributions to the Industrial Hygiene Profession, 2014
- American Industrial Hygiene Association Fellow, 2003-
- AIHA Press Publications Award of Excellence, Outstanding Year 2000 General Publication, *Risk Assessment Principles for the Industrial Hygienist*, 2000.

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PUBLICATIONS

Koivisto, A.J, K. I. Kling , O. Hänninen , M.A. Jayjock , J. Löndahl , A. Wierzbicka , A.S. Fonseca , K. Uhrbrand , B. E. Boor, A. S. Jiménez , K. Hämeri , M. Dal Maso , S. F. Arnold , K. A. Jensen , M.Viana , L. Morawska, T. Hussein: Source specific exposure and risk assessment for indoor aerosols. *Science of the Total Environment* 668 (2019) 13–24

Jayjock M.A., A. A. Havics: Residential Inter-zonal Ventilation Rates for Exposure Modeling, *Journal of Occupational and Environmental Hygiene*, 2018, Volume.15, 5, 376–388.

Maier A., M.J. Vincent, A. Parker, B.K. Gadagbui and M.A. Jayjock: A tiered asthma hazard characterization and exposure assessment for evaluation of consumer product ingredients, *Regulatory Toxicology and Pharmacology*, Volume 73, Issue 3, December 2015, Pages 903-913

Waters M., L. McKernan, A. Maier, M. Jayjock, V. Schaeffer & L. Brosseau: Exposure Estimation and Interpretation of Occupational Risk: Enhanced Information for the Occupational Risk Manager, *Journal of Occupational and Environmental Hygiene*, Volume 12, Supplement 1, November 2015, pages S99-S111

Tank Vapor Assessment Team: Hanford Tank Vapor Assessment Report, SRNL-RP-2014-00791, Revision 0, October 30, 2014.
http://srnl.doe.gov/documents/Hanford_TVAT_Report_2014-10-30-FINAL.pdf Last accessed November 14, 2014.

Jayjock, M.A.: Estimating Overspray Exposure Potential from Aerosol Sprayed Products onto Surfaces, 9:9, D155-D160, *Journal of Occupational and Environmental Hygiene* (2012)

Jayjock, M.A., T.W. Armstrong, M. Taylor: The Daubert Standard as Applied to Exposure Assessment Modeling Using the Two-Zone (NF/FF) Model Estimation of Indoor Air Breathing Zone Concentration as an Example, *Journal of Occupational and Environmental Hygiene*, November 2011, 8: D114–D122 ISSN: 1545-9624 print / 1545-9632 online

Jayjock, M.A., S.F. Arnold; Modeling Inhalation Exposure, Chapter 10, in *The Occupational Environment – Its Evaluation and Control*, 3rd Edition aka “The White Book”, Edited by Daniel H. Anna, ISBN: 978-1-935082-15-6, American Industrial Hygiene Association, Fairfax, VA (2011)

Jayjock, M.A., P.W. Logan, B. Mader, J. Owens, J. Eldridge, M. Costello, M. Morken, P. Lieder: Modeled Comparisons of Health Risks Posed by Fluorinated Solvents in a Workplace Spill Scenario, *Ann Occup Hyg* (2011) 55(2): 202-213 first published online September 13, 2010 doi:10.1093/annhyg/meq062

Pearson, R.L., M.A. Jayjock, S.F. Arnold: REACh – A New and Important Reason to Learn Modeling. Chapter 14 in *Mathematical Models for Estimating Occupational Exposure to Chemicals*, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors,

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American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Arnold, S.F., G. Ramachandran, M.A. Jayjock: Model Selection. Chapter 12 in *Mathematical Models for Estimating Occupational Exposure to Chemicals*, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Jayjock, M.A., G. Ramachandran, S.F. Arnold: Uncertainty. Chapter 10 in *Mathematical Models for Estimating Occupational Exposure to Chemicals*, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Reinke P.H. M.A. Jayjock, M. Nicas: Well-Mixed Rooms with Changing Conditions. Chapter 5 in *Mathematical Models for Estimating Occupational Exposure to Chemicals*, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Jayjock, M.A., M. Stenzel, T.R. Anthony, S.F. Arnold: Why Model? Chapter 1 in *Mathematical Models for Estimating Occupational Exposure to Chemicals*, 2nd Edition, Keil CB, Simmons CE and Anthony TR editors, American Industrial Hygiene Association, ISBN: 978-1-935082-10-1, Fairfax, VA (2009).

Jayjock, M.A., C.F. Chaisson, Claire A. Franklin, S. Arnold, Paul S. Price: Using publicly available information to create exposure and risk-based ranking of chemicals used in the workplace and consumer products, *Journal of Exposure Science and Environmental Epidemiology*, 19, 515-524 (2009)

Price, P.S. and M.A. Jayjock: Available data on naphthalene exposures: Strengths and limitations, *Regulatory Toxicology and Pharmacology* 51 s15-S21, (2008)

Jayjock, M.A. , C.F. Chaisson, S. Arnold, E.J. Dederick: Modeling Framework for Human Exposure Assessment, 17, S81-89, *Journal of Exposure Science and Environmental Epidemiology*, (2007)

Kephalopoulos, S, A. Arvanitis, M.A. Jayjock (Eds): Global CEM Net Report of the Workshop no. 2 on "Source Characterization, Transport and Fate", Intra (Italy), 20-21 June 2005. Available online:
http://www.jrc.ec.europa.eu/pce/documentation/eur_reports/Global%20CEM%20Net%20Workshop%202%20SOURCES.pdf
Last accessed May 27, 2009.

Jayjock, M.A.: How much is enough to accept hormesis as the default? Or 'At what point, if ever, could/should hormesis be employed as the principal dose-response default assumption in risk assessment?' *Human & Experimental Toxicology*, 24, 245-247. (2005).

Jayjock, M.A., P.S. Price, C.F. Chaisson: Monte Carlo Analysis, Chapter in *Encyclopedia of Toxicology*, Philip Wexler (Ed), ISBN 0-12-745354-7, Elsevier, 2005.

Weiler, E.D., O'Hara G.P., Shade, W.D., and Jayjock, M.A. Setting Workplace Exposure Limits: An Important Stewardship Function. *Environmental Quality Management*, Vol.14 No.2: 49-57 (2004).

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Jaycock, M.A. and P.G. Lewis: Implications of Hormesis for Industrial Hygiene, Human & Experimental Toxicology 21: 385-389 (2002).

M. Nicas and M.A. Jaycock: Uncertainty in Exposure Estimates Made by Modeling versus Monitoring, Am. Ind. Hyg. Assoc. J. 63: 275-283 (2002).

M.A. Jaycock, P.G. Lewis and J.R. Lynch: Quantitative Level of Protection Offered to Workers by ACGIH Threshold Limit Values (TLV) Occupational Exposure Limits, Am. Ind. Hyg. Assoc. J. 62: 4-11 (2001).

Nelson, T.J, M.A. Jaycock and C.E. Colton: How Protective Are Respirator Assigned Protection Factors? : An Uncertainty Analysis, Am. Ind. Hyg. Assoc. J. 61: 388-393 (2000).

Jaycock, M.A.: Chapters 1 and 6 in Mathematical Models for Estimating Occupational Exposure to Chemicals, edited by C.B. Keil, American Industrial Hygiene Association, Fairfax, VA (2000).

Jaycock, M.A., J.R. Lynch and D.I. Nelson, Risk Assessment Principles for the Industrial Hygienist, American Industrial Hygiene Press, ISBN: 0-932626-9708, 2700 Prosperity Avenue, Fairfax, VA, May, 2000.

Jaycock, M.A.: Risk Assessment of Contact Allergens, American Journal of Contact Dermatitis, 9 (3): 155-161 (1998).

Jaycock, M.A. and J.E. Franke: A Strategy for Occupational Exposure Assessment, Appendix I, Estimating inhalation exposure with physical-chemical models, American Industrial Hygiene Association, Fairfax, VA (1998).

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M.A. Jaycock, K.H. Reinert, H.E. Scribner, et al: Total Quality Management of the Risk Assessment Process, Am. Ind. Hyg. Assoc. J. 58 (11): 814-819 (1997).

Shade, W.D. and M.A. Jaycock: "Monte Carlo Uncertainty Analysis of a Diffusion Model for the Assessment of Halogen Exposure during Dosing of Brominators," Am. Ind. Hyg. Assoc. J. 58 (6): 418-424 (1997).

Jaycock, M.A.: Uncertainty Analysis in the Evaluation of Exposure, Am. Ind. Hyg. Assoc. J. 58 (5): 380-382 (1997).

Weiler, E.D., M.A. Jaycock, and H.C. Levy: Product Safety, Risk Assessment, and Responsible Care in the Biocide Chemical Industry, Reg Tox. Pharm. 24, 1-5 (1996).

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Development and Evaluation of a Source/Sink Model of Indoor Air Concentrations from
Isothiazolone Treated Wood Used Indoors, Am. Ind. Hyg. Assoc. J. 56 (6): 546-557
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Model Validation, Appl. Occup. Environ. Hygiene 10 (4): 379-382, April (1995).

Lewis, P.G, and M.A. Jaycock, Risk Assessment Modeling: Allergic Contact Dermatitis
Application, American Journal of Contact Dermatitis, 5(3): 143-149, September (1994).

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Sources, Am. Ind. Hyg. Assoc. J. 55 (3): 230-235 (1994).

Committee to Review Risk Management in the DOE's Environmental Remediation
Program: Building Consensus Through Risk Assessment and Management of the
Department of Energy's Environmental Remediation Program National Research
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Jaycock, M.A. and N.C Hawkins: A Proposal for Improving the Role of Exposure
Modeling in Risk Assessment, Am. Ind. Hyg. J. 54(12):733-741 (1993).

Weiler, E.D., M.A. Jaycock, and D.E. Greenley: Quality Requirements for Biocides in the
1990s, Quality Assurance: Good Practice, Regulation, and Law., 2(3): 244-250 (1993).

Weiler, E.D., M.A. Jaycock, and H.E. Scribner: A Quality Process for Chemical Product
Risk Assessment, Quality Assurance: Good Practice, Regulation, and Law., 1(4): 295-
301 (1992).

Jaycock, M.A. and P.G.: Lewis: Low-Applied-Dose Extrapolation of Induction and
Elicitation of Contact Allergy in the Evaluation and Management of Sensitization Risk
from Kathon CG Isothiazolone in Products, American Journal of Contact Dermatitis,
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Committee on Advances in Assessing Human Exposure to Airborne Pollutants: Human
Exposure Assessment for Airborne Pollutants, National Research Council Board of
Environmental Studies and Toxicology, National Academy of Science, National
Academy Press, Washington, D.C. (1991).

Rosenthal I., M.A. Jaycock, R.L. Keener, and J.E. Plamondon: Regulating the
Introduction of New Chemicals Under Section 5 of TSCA - Improving the Efficiency of
the Process and Reducing Potential Injury in the Workplace Through the Use of
Operational MSDS and Exposure Limits, Quality Assurance: Good Practice, Regulation,
and Law., 1(1):10-30, (1991).

Hawkins, N.C., M.A. Jaycock, and J.R. Lynch: A Rationale and Framework for
Establishing the Quality Of Human Exposure Assessments, 53(1):34-41, Am. Ind. Hyg.
J. (1991).

Jaycock, MA, and J.N. Moss, Assessing the Risk of Toxicity, Manufacturing Chemist 60:
(9) 37-38 September 1989

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Jayjock, M.A. and S.C. Gad: Hazard and Risk Assessment, Chapter 15 in Product Safety Evaluation Handbook, edited by S.C. Gad, Marcel Dekker, New York (1988).

Jayjock, M.A. and K.A. Hulik: Workroom Air Monitoring of Isothiazolone Biocide from Metal Working Fluids, J. Am. Soc. Lubr. Eng. 44 (3): 262-264 (1988).

Jayjock, M.A.: Assessment of Inhalation Exposure Potential from Vapors in the Workplace, Am. Ind. Hyg. Assoc. J. 49(8): 380-385, (1988).

Jayjock, M.A. and L. Levin: Health Hazards in a Small Automotive Body Repair Shop, Ann. Occup. Hyg. 28(1): 19-29 (1984).

PROFESSIONAL COMMITTEES

U.S. EPA Science Advisory Board, Ad Hoc Member Chemical Assessment Advisory Committee, FY 2019.

Peer Review U.S. EPA Draft Exposure and Use Assessment of Five PBT Chemicals, 2018,

Reviewer of U.S. EPA Draft Guidelines for Human Exposure Assessment, 2016

Hanford Tank Vapor Assessment Team, U.S. DOE, 2014.

Peer Review Panel: Draft Risk Assessment for Trichloroethylene (TCE)/Degreaser Arts/Crafts Uses, U.S. EPA, 2013

Science Advisory Board Panel on Lead Exposure, U.S. EPA 2010-2011

Peer Consultation Panel, Perfluorooctanoic Acid (PFOA) Site-Related Environmental Assessment Program, U.S. EPA 2008.

Peer Consultation Panel on Ethyl Benzene, U.S. EPA – Office of Pollution Prevention & Toxics - Voluntary Children's Chemical Evaluation Program (VCCEP), 2007.

Board of Scientific Councilors, U.S. EPA - Peer Review Panel for Office of Research and Development Science Program 2005

Peer Consultation Panel on Methyl Ethyl Ketone, U.S. EPA – Office of Pollution Prevention & Toxics - Voluntary Children's Chemical Evaluation Program (VCCEP), 2004.

Peer Consultation Panel on Flame Retardants, U.S. EPA – Office of Pollution Prevention & Toxics - Voluntary Children's Chemical Evaluation Program (VCCEP), 2003.

Human Health Research Strategy Panel, U.S. EPA - Science Advisory Board, Executive Committee 2002.

Integrated Human Exposure Committee (IHEC), U.S. EPA - Science Advisory Board, Consultant, 2001-2003

Integrated Human Exposure Committee (IHEC) – U.S. EPA Science Advisory Board Member 1998-2001

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Committee on Risk Assessment of Flame-Retardant Chemicals, National Research Council - National Academy of Sciences Committee on Toxicology – 2000.

Human Health Exposure Assessment Technical Implementation Panel (TIP), American Chemistry Council (formerly Chemical Manufacturers Association) 1999-2001

Science Program Committee, Chemical Industry Institute of Toxicology working on State of the Science (STOTS) research needs in risk assessment 1998

Committee on Risk Assessment, American Industrial Hygiene Association 1998-present

Editorial Board Member – American Industrial Hygiene Journal 1998-2003

Peer-Review Panel for the science program at the National Exposure Assessment Laboratory of the US Environmental Protection Agency (US EPA – NERL) 1996.

Committee on Exposure Assessment Strategies, American Industrial Hygiene Association 1996-present

Committee to Review Risk Management in the DOE's Environmental Remediation Program, National Research Council - National Academy of Sciences 1994

Committee on Advances in Assessing Human Exposure to Airborne Pollutants National Research Council - National Academy of Sciences 1991

EPA Technical Review Committee, EPA/Southwest Research Institute: Project: "Engineering and Toxic Characterization Studies and Development of Unit Operations Predictive Models for New Chemicals." 1989

Health and Safety Committee, Exposure Assessment Task Group (EATG), American Chemistry Council (formerly Chemical Manufacturers Association) 1985-1999