

Qualifications of Steven P. Levine, Emeritus Professor, University of Michigan

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Experience and Accomplishments

Steven Levine is an Emeritus Professor of Industrial Health in the Department of Environmental Health Sciences of the School of Public Health at the University of Michigan.

<http://www.sph.umich.edu/faculty/slih.html> He was a professor in this program from 1982 until his retirement in July 2003. Prior to entering academia in 1982, he worked in industry for eight years at Stauffer Chemical Company, Ford Motor Company and then at OH Materials [hazardous waste and emergency response] Company.

He has field experience with a very wide variety of chemical and manufacturing processes on both OSHA and EPA issues, primarily with problems of assessment of exposure of workers and the community. Major areas of research and practice during his career have been exposure assessment methodology, personal protective equipment and assessment of control devices applied to a wide variety of occupational and environmental situations, and risk communication including both instrument manuals and product stewardship programs. He is well known in the US, Europe, Asia and South America.

While at Stauffer Chemical Company, Eastern Research Center from 1974 to 1976, he had both laboratory and field experience on exposure assessment and control projects for vinyl chloride monomer, benzidine, lead chromate, phosphorus, organophosphorus pesticides, and silica.

During his career, he served as both committee member and Chair of committees that developed quality control protocols for measurement instruments, both nationally and internationally. He applied these protocols to the development and implementation of a laboratory accreditation program for Korea. He is well published in this field, and both the field and laboratory aspects of exposure assessment in the workplace and environment are within his areas of expertise.

Publications on this subject include¹:

¹ Publications prior to 1994 are not included in this list.

1. Simonds, M., Xiao, H.K., Levine, S.P. 1994. Open Path Spectroscopic Air Monitoring Methods - A Review. *Amer. Ind. Hyg. Assoc. J.*, 55:953-965.
2. Malachowski, M.S., Levine, S.P., Herring, G., Spear, R.C., Yost, M. and Yi, Z. 1994. Workplace and Environmental Air Contaminant Concentrations Measured by Open Path FTIR Spectroscopy: A Statistical Process Control Technique to Detect Changes from Normal Operating Conditions. *Air Waste Management Assoc. J.*, 44:673-682.
3. Levine, S.P. and Russwurm, G. 1994. FTIR Optical Remote Sensing for Monitoring Airborne Gas and Vapor Contaminants. *Trends in Anal. Chem.*, 13: 258-262.
4. Paik, N.W., Levine, S.P., and Schork, M.A. 1994. Intra-Counter, Intra-Laboratory and Inter-Laboratory Variation in Asbestos Counting with Phase-Contrast Microscopy [in Korea]. *Appl. Occup. Environ. Hygiene*, 9: 510-516.
5. Groves, W.A., Hahne, R.M.A., Levine, S.P., and Schork, M.A. 1994. A Field Comparison of Respirable Dust Samplers. *Amer. Ind. Hyg. Assoc. J.*, 55: 748-755.
6. Lo, W.C.H. and Levine, S.P. 1994. Chinese-Language Labeling of Personal Protection Equipment. *Appl. Occup. Environ. Hygiene*, 9:961.
7. Yost, M., Drescher, A., Zhou, Y., Saisan, P., Simonds, M., Nazaroff, W., Levine, S., and Gadgil, A., 1994. Imaging Indoor Tracer-Gas Concentrations with Computed Tomography: Experimental Results with a Remote Sensing FTIR System. *Amer. Ind. Hyg. Assoc. J.*, 55:395-402.
8. "Protecting Personnel at Hazardous Waste Sites", S.P. Levine and W. F. Martin, Eds., Butterworth Publishers, Woburn, MA, Second Edition (1994).
9. Levine, S.P., Turpin, R.D. and Gochfeld, M. "Protecting Personnel at Hazardous Waste Sites: Current Issues", Chapter 1 in *Protecting Personnel at Hazardous Waste Sites, Second Edition*, (1994), Butterworth, Woburn, MA
10. Levine, S.P., Hillig, K.J.D., Dharmarajan, V. 1995. Critical Review of Methods of Sampling, Analysis and Monitoring for TDI and MDI. *Amer. Ind. Hyg. Assoc. J.*, 56: 581-589.
11. Paik, N.W., Levine, S.P., and Schork, M.A. 1995. Inter-Laboratory Precision and Bias in Metal Analysis at Industrial Hygiene Laboratories in Korea. *Appl. Occup. Environ. Hygiene*. 10: 566-572.
12. Giese-Bogdan, S. and Levine, S.P. 1996. International Diffusion of Open Path FTIR Technology and Air Monitoring Methods: Taiwan (Republic of China), *Air & Waste Management Assoc. J.* 46:761-764.

13. Paik, N.W., Levine, S.P. and Schork, M.A. 1997. Development and Application of a Quality Control Program for Industrial Hygiene Laboratories in Korea. *Appl. Occup. Environ. Hygiene* 12: 46-53.
14. Chinni, A., Levine, S.P., and Wang, S. 1997. Safe Air in the Workplace? [in China] *WHO Forum* 18: 39-40.
15. Drescher, A.C., Park, D.Y., Yost, M.G., Gadgil, A.J., Levine, S.P. and Nazaroff, W.W. 1997. Stationary and Time-Dependent Indoor Tracer-Gas Concentration Profiles Measured by Open Path-FTIR Remote Sensing and SBFM Computed Tomography. *Atmospheric Environment*: 31(5):727-740.
16. Park, D.Y., Yost, M.G., Drescher, A.C. and Levine, S.P. 1997. Evaluation of Virtual Source Beam Configurations for Rapid Tomographic Reconstruction of Gas and Vapor Concentrations in Workplaces. *Air Waste Manage. Assoc. J.* 47:582-591.
17. Paik, N.W., Levine, S.P. and Schork, M.A. 1997 A Strategy for Quality Control for Industrial Hygiene Laboratories in Developing and Newly Industrialized Countries *World Health Forum* 18: 359-362.
18. Charron, K.A., Puskar, M.A. and Levine, S.P. 1998. Field Validation of Passive Monitors for the Determination of Employee Exposures to Methylene Chloride in Pharmaceutical Production Facilities. *Amer. Ind. Hyg. Assoc. J.* 59: 353-358
19. Park, D.Y., Levine, S.P. and Russwurm, G.R. Fourier Transform Infrared Optical Remote Sensing. *The Encyclopedia of Environmental Analysis and Remediation*. p 4137-4149. Wiley, NYC, (1998)
20. Giese-Bogdan, S., Levine, S.P. and Molt, K. 1999. Application of the Shifting Method as a Technique to Correct for the Background in Quantitative Analysis by Open Path-FTIR. *Air Waste Manage. Assoc. J.* 49: 114-124.
21. Yost, M.G., Hashmonay, RA, Zhou, Y., Spear, R., Park, D.Y. and Levine, S.P. Estimating Maximum Concentrations for Open Path Monitoring Along a Fixed Beam Path. *J. Air Waste Manage. Assoc.* 49: 424-433, April 1999
22. Park, D.Y., Fessler, J.A., Yost, M.G. and Levine, S.P. (2000) Tomographic Reconstruction of Tracer Gas Concentration Profiles in a Room with the Use of a Single OP-FTIR and Two Iterative Algorithms: ART and PWLS. *Air Waste Manage. Assoc. J.* 50: 357-370.
23. Su Z., Wang S., and Levine, S.P. (2000) National Occupational Health Service Policies and Programs for Workers in Small-Scale Industries in China. *Amer. Ind. Hyg. Assoc. J.* 61: 842-849.
24. Levine, S.P. and Thornton, J.R., (2004) Requirements for LEL Monitoring During Hazard Surveys for Issuance of Hot Work Permits. *Professional Safety* 49: 31-39

He was the first person (with his students Brandt, Dyjack, Park, Redinger and Markey) to publish peer-reviewed articles on the subject of occupational health and safety management systems (OHS MS), and financial analysis of industrial hygiene systems:

1. Dyjack, D.T. and Levine, S.P., 1995. Development of an ISO 9000 Compatible Occupational Health Standard: Defining the Issues. *Amer. Ind. Hyg. Assoc. J.*, 56: 599-609.
2. Levine, S.P. and Dyjack, D.T. 1995. Development of an ISO 9000 Compatible Occupational Health Standard - II: Defining the Potential Benefits and Open Issues. *Amer. Indus. Hyg. Assoc. J.* 57: 387-391.
3. Park, D.Y., Brandt, M., Levine, S.P. and Paik, N.W. 1996. Activity-Based Costing to Determine the True Cost of the Delivery of ES&H Services. *Korean Industrial Hygiene Journal* 6: 144-155.
4. Markey, D., Levine, S.P. and Redinger, C. 1996. Conformance of ISO OSHMS Standards in Public-Sector Procurement Specifications to the GATT/WTO Requirements. *Amer. Ind. Hyg. Assoc. J.* 57: 936-944.
5. Dyjack, D. and Levine, S.P. 1996. Critical Features of an ISO 9001/14001 Harmonized Health and Safety Assessment Instrument. *Amer. Ind. Hyg. Assoc. J.* 57: 929-935.
6. Levine, S.P. and Dyjack, D.T. 1997. Critical Features of an Auditable Management System for an ISO 9000-Compatible Occupational Health and Safety Standard. *Amer. Ind. Hyg. Assoc. J.* 58: 291-298
7. Dyjack, D.T., Levine, S.P., Holtshouser, J.L. and Schork, M.A. Comparison of AIHA ISO 9001-based Occupational Health and Safety Management System Guidance Document With a Manufacturer's Occupational Safety and Health Assessment Instrument. *Amer. Ind. Hyg. Assoc. J.* 59: 419-429
8. Brandt, M, Levine, S.P., Smith, D.G. and Ettinger, H.J. 1998. Activity-Based Cost Management (ABCM)-I: Applied to Occupational and Environmental Health Organizations. *Amer. Ind. Hyg. Assoc. J.* 59: 328-334
9. Brandt, M, Levine, S.P., Smith, D.G. and Ettinger, H.J. 1998. Activity-Based Cost Management (ABCM)-II: Applied to a Respiratory Protection Program Using a Computer Model. *Amer. Ind. Hyg. Assoc. J.* 59: 335-345
10. Redinger, C.F. and Levine, S.P., 1998. Development and Evaluation of the Michigan Occupational Health and Safety Management System Assessment Instrument: A Universal OHSMS Performance Measurement Tool. *Amer. Indus. Hyg. Assoc. J.* 59: 572-581

11. Redinger, C.F. and Levine, S.P., 1998. Analysis of Third-Party Certification Approaches Using the Michigan Occupational Health and Safety Conformity-Assessment Model. *Amer. Indus. Hyg. Assoc. J.* 59: 802-812
12. Brandt, M., Levine, S.P. and Gourdoux, J. 1999. A Descriptive Case Study of the Application of ABCM to a Fire Protection Department. *Professional Safety* 44:22-27
13. Redinger, C.F., Levine, S.P., Blotzer, M.J. and Majewski, M.P. (2002) Evaluation of an Occupational Health and Safety Management System Performance Measurement Tool - II: Scoring Methods and Field Study Sites. *Amer. Ind. Hyg. Assoc. J.* 63: 34-40.
14. Redinger, C.F., Levine, S.P., Blotzer, M.J. and Majewski, M.P. (2002) Evaluation of an Occupational Health and Safety Management System Performance Measurement Tool - III: Measurement of Initiation Elements. *Amer. Ind. Hyg. Assoc. J.* 63: 41-46.

His group's work was the foundation of the U.S. AIHA OHS MS professional standard:

- Levine, S.P. and Dyjack, D.T., principle authors and Task Force Co-Chairs, Occupational Health and Safety Management System: An AIHA Guidance Document. AIHA OHSMS 96/3/26. American Industrial Hygiene Association, Fairfax, VA. (1996).

Was the primary reference for the analysis of OHS MS by the European Union:

- “The Use of Occupational Health and Safety Management Systems in the Member States of the European Union.” European Agency for Safety and Health at Work, ISBN 92-95007-59-x. Belgium (2002) <http://agency.osha.eu.int/publications/reports/307/en/>

Was the foundation for the ILO's OSH MS Guidance Document:

- Dalrymple, H., Redinger, C., Dyjack, D., Levine, S., and Mansdorf, Z. OHS Management Systems: Review and Analysis of International, National & Regional Systems; &, Proposals for a New International Document. The International Labour Office. Geneva, SZ <http://www.ilo.org/public/english/90travai/cis/managmnt/index.htm> (1999)

And he has published books, book chapters, and articles on the subject:

15. Redinger, C.R., and Levine, S.P. “An ISO Occupational Health and Safety Management System” in “ISO 14000 Handbook”, T. Tibor, Ed., Irwin Publishers, (1996)

16. Redinger, C.F. and Levine, S.P. "New Frontiers in Occupational Health and Safety: A Management Systems Approach and the ISO Model" AIHA Policy Monograph (1996).
17. Redinger, C.R., and Levine, S.P. "An ISO Occupational Health and Safety Management System" in "ISO 9000 Handbook", T. Tibor, Ed., Irwin Publishers, (1997)
18. Herrick, R.H. and Levine, S.P. "Position Statement on National Research Priorities for Occupational Health", Appl. Occup. Environ. Hygiene 12: 5-6 (1997).
19. Park, D.Y., Levine, S.P. Paik, N.W. Saving the Lives of Korean Workers: The Use of ISO 14001-Harmonized OHS Management Systems. Korean Studies Progr. U. Michigan (1998)
20. Redinger, C.F. and Levine, S.P. "The Universal Assessment Instrument for Occupational Health and Safety Management Systems" AIHA publications (1999).

Including all industrial hygiene subjects, he has published more than 100 peer-reviewed articles, and many books and book chapters.

Service

In 2000-2001 he was President of the American Industrial Hygiene Association. www.aiha.org He was named one of the ten most influential industrial hygienists in 1998. He brought the World Health Organization Collaborating Center in Occupational Health http://www.who.int/occupational_health/network/en/ to the University of Michigan in 1999. He has performed service in numerous other ways to the academic and professional communities:

- Co-Founder, Vice-Chair, Joint AIHA ACGIH, Hazardous Waste Committee, 1983- 1991
- Chair, RS-5 "Measurement of Pollution from Hazardous Wastes" of the Organisation Internationale Metrologie Legale, 1985-1988 <http://www.oiml.org/>
- Chair, Gas and Vapor Committee, AIHA, 1991-1992
- AIHA Board of Directors, 1992-1995
- NSF International Strategic Registrations, Ltd., <http://www.nsf-isr.org/> Combined ISO-9000/ISO-14000 Quality Systems Program Advisory Council, 1993 - 2008
- Co-Director, UM-MSU WHO Collaborating Center for Occupational Health, 1997-2000
- President, American Industrial Hygiene Association, May 2000 - June 2001
- U.M. Hospital Trauma Burn Center Site Safe Faculty, 2001
- Chair, AIHA Nominations & Awards Committees, 2001-2003; Yant Committee, 2002-2003
- Member, numerous AIHA committees & task forces, i.e., "Value of the Profession TF" 2005
- Lecturer: "The Patient's Perspective". Health care provider organizations, sites and conferences, 1999-present.
- Member of Board of Trustees, American Industrial Hygiene Foundation, 2007 – 2008 <http://www.aiha.org/Content/InsideAIHA/Foundation/foundation.htm>
- Sec'ty/Treasurer, Academy of Industrial Hygiene 2007 - 2008 <http://www.aiha.org/Content/Academy/aihhome.htm>

Honors, Awards and Certifications

- ABIH Certified Industrial Hygienist, Chemical Practice 1990, Comprehensive Practice 1991
- AIHA/ACGIH Hazardous Waste Committee. "Drum Buster" Award 1989
- Outstanding Scientific Presentations, Second International Symposium: Field Screening Methods for Hazardous Wastes and Toxic Chemicals, Las Vegas, NV, 1991.
- John White Award: Best Respiratory Protection Paper, AIHA Journal 1991
<http://www.aiha.org/content/insideaiha/committees/jmwhiteaward.htm>
- One of Ten Most Influential Industrial Hygienists in the U.S., named by Occupational Hazards magazine. 1998
- Adjunct Professor, Institute of International Health, Michigan State University, 1998-present
<http://www.msu.edu/unit/iih/>
- Adjunct Professor, Tulane University CAEPH, 1999-present
- Redinger and Levine. "The Universal Assessment Instrument for Occupational Health and Safety Management Systems" chosen as the "Outstanding 1999 AIHA Publication".
- Jeffrey S. Lee Lectureship at AIHCE, ACGIH, 2000
- Fellow, American Industrial Hygiene Association, 2002-present
<http://www.aiha.org/Content/AboutAIHA/fellows.htm>
- Donald E. Cummings Award, American Industrial Hygiene Association, 2006
<http://www.aiha.org/Content/AboutAIHA/cummings.htm>
- Life Member, Michigan Industrial Hygiene Soc. 2006
http://www.mihsweb.org/about_mihs.htm

Non-Peer Reviewed (Articles solely authored by Levine unless otherwise noted)

1. Geise-Bogdan, S. and Levine, S.P. 1995. from Michigan to Taiwan: Air Pollution Technology. J. International Institute. 3(1):4.
2. Levine, S.P. and Chinni. A. 1996. Industrial Growth and China's Occupational Health. J. International Institute. 3(3):13.
3. Rocking the Ivory Tower. Ind. Safety and Hygiene News. Oct., 1996, p. 48 (1996)
4. A Vision for Health and Safety. The Conference Board. Web Page (1996)
5. A New Career for Industrial Hygienists. Guest Ed. Amer. Indus. Hygiene Assoc. J. (1997)
6. Novas Fronteiras em Saude e Seguranca Ocupacional e Ambiental: Uma Abordagem de Sistema de Gestao e o Modelo ISO. Terceirizacao em Seguranca e Saude Ocupacional No Comercio Sericos e Industria. SENAC e Fundacento. Sao Paulo, Brasil (1996)
7. Private Sector Services for Outsourcing of Occupational Health and Safety in the US and Internationally. Conferencia Internacional Sobre Terceirizacao em Seguranca e Saude Ocupacional No Comercio Servicos e Industria (1996)
8. Charting the Chaebols in 2021. Occup. Hazards. p. 21 (Dec. 1996)
9. Beyond Ethical Imperatives in Occupational Health and Safety. Synergist. P. 18 (Feb.1997)
10. Levine, S. P., Dyjack, D. T. (July, 1998) Aplicao Mundial: As Caracteristicas De Um Sistema Auditavel Para Uma Norma De Saude Compativel Com ISO 9000. Revista Protecao 11: 50-55
11. The Injured Worker. Synergist (May 1999).
12. Third Parties and Conformity Assessment. Occupational Hazards. (Nov 1999)
13. The Injured Worker (part II). Occupational Hazards. (Jan 2000)
14. Our Mission. Occupational Hazards. (April 2000)
15. Lessons About Disabilities. Occupational Hazards. (May 2000)
16. Risk Communication. Occupational Hazards. (Sept 2000)
17. Will There be an OHSMS? Occupational Hazards. (Oct 2000)
18. A Hand Was Dealt. Occupational Hazards. (Nov 2000)
19. Delivering Value to Academic Programs and to Students. Synergist/Diplomate (Nov 2000)
20. Business Aspects of AIHA in the 21 Century. Synergist (Dec 2000).
21. Contract Specifications. Occupational Hazards. (Jan 2001)
22. A Leadership Team. Synergist (March 2001).
23. A Labor of Love. Occupational Hazards. (March 2001)
24. An Industry Safety and Health Forgot: Health Care. Synergist. (April 2001)
25. High Speed, High Impact. Synergist (April 2001)

26. Value Driven Service. Occupational Hazards. (May 2001)
27. What Doesn't Kill You Only Makes You Harder. Occupational Hazards. (Sept 2001)
28. Levine, S.P. Competitors Find It Hard To Cooperate. Occupational Hazards. (Nov 2001)
29. Was dich nicht tötet, macht dich härter. DGAH Geschäftsstelle für Arbeitshygiene. (paper #32 translated by Lechnitz, K.) (Dec 2001)
30. Responsibility and Authority. Occupational Hazards. (Jan 2002)
31. Quality Assurance in Environmental Measurements. Synergist. (May 2002)
32. And I'll Visit Dracula's Castle [OHS Management Systems on a Global Basis] Occupational Hazards. (May 2002)
33. Su Z., Wang S., and Levine, S.P.. (2002) Occupational Health Hazards for Chinese Workers and Possible Remedies. Transition (newsletter of the World Bank) 13 (4/5): 37-40.
34. Management Systems (MS) for Occupational Health Medical Surveillance. Occupational Medicine Clinical Care Update. (Journal of the NAOHP) 9 (14): 1-2 (Jan 2003). Reprinted in Safety Matters Singapore Institution of Safety Engineers. Jan-Mar, p. 6. 2003.
35. The Most Important Topics. Occupational Hazards. (May 2003)
36. Joe's Story – and How We Could Have Saved Him Synergist (July 2003)
37. Product Stewardship: A Valuable Resource Occupational Medicine Clinical Care Update. (Journal of the NAOHP) 10 (3):1-2 (July 2003)
38. Certification 101: How to Take the Exam. Synergist (Feb 2004)
39. So You Are Planning to Take the ABIH Exam! Synergist – Academy Newsletter (June 2004)
40. Help for Small and Medium Enterprises. Synergist (Feb 2005)
41. We Hold That Petitioners Injury is Compensable. Synergist – Diplomate (June/July 2005)
42. Levine, S.P. and Singh, J. Globalization of Industrial Hygiene in the Flat World – Which Economies are Ready for Industrial Hygiene? Synergist – Diplomate (October/November 2006)
43. Levine, S.P. 2006 Donald E. Cummings Award Lecture – Industrial Hygiene: The Founders, The Pioneers, and The Next Generation. J. Occup. Environ. Hygiene. 3: D102–D109

Non-Peer Reviewed (Books and Book Chapters)

1. "Protecting Personnel at Hazardous Waste Sites", S.P. Levine and W. F. Martin, Eds., Butterworth Publishers, Woburn, MA, Second Edition (1994).
2. Levine, S.P., Turpin, R.D. and Gochfeld, M. "Protecting Personnel at Hazardous Waste Sites: Current Issues", Chapter 1 in Protecting Personnel at Hazardous Waste Sites, Second Edition, (1994), Butterworth, Woburn, MA
3. Redinger, C.R., and Levine, S.P. "An ISO Occupational Health and Safety Management System" in "ISO 14000 Handbook", T. Tibor, Ed., Irwin Publishers, (1996)
4. Redinger, C.F. and Levine, S.P. "New Frontiers in Occupational Health and Safety: A Management Systems Approach and the ISO Model" AIHA Policy Monograph (1996).
5. Levine, S.P. and Dyjack, D.T., principle authors and Task Force Co-Chairs, Occupational Health and Safety Management System: An AIHA Guidance Document. AIHA OHSMS 96/3/26. American Industrial Hygiene Association, Fairfax, VA. (1996).
6. Redinger, C.R., and Levine, S.P. "An ISO Occupational Health and Safety Management System" in "ISO 9000 Handbook", T. Tibor, Ed., Irwin Publishers, (1997)
7. Herrick, R.H. and Levine, S.P. "Position Statement on National Research Priorities for Occupational Health", Appl. Occup. Environ. Hygiene 12: 5-6 (1997).
8. Park, D.Y., Levine, S.P. and Russwurm, G.R. Fourier Transform Infrared Optical Remote Sensing. The Encyclopedia of Environmental Analysis and Remediation. p 4137-4149. Wiley, NYC, (1998)
9. Park, D.Y., Levine, S.P. Paik, N.W. Saving the Lives of Korean Workers: The Use of ISO 14001-Harmonized OH&S Management Systems. Korean Studies Program. U Michigan (1998).
10. Redinger, C.F. and Levine, S.P. "The Universal Assessment Instrument for Occupational Health and Safety Management Systems" AIHA publications (1999).
11. Dalrymple, H., Redinger, C., Dyjack, D., Levine, S., and Mansdorf, Z. Occupational Health and Safety Management Systems: Review and Analysis of International, National & Regional Systems; &, Proposals for a New International Document. The International Labour Office. Geneva, SZ
<http://www.ilo.org/public/english/90travai/cis/managmnt/index.htm> (1999)
12. Brandt, M., Levine, S.P. and Gourdoux, J. 2000. A Descriptive Case Study of the Application of ABCM to a Fire Protection Department. In "Emerging Practices in Cost Management – Strategic Cost Management" WG&L Professional Division, Research Institute of America.

Education

1965	City University of New York	B.S.	Chemistry
1972	University of Colorado	Ph.D.	Analytical Chemistry

Professional Employment

1972-1974	Post-doctoral Research Scientist, Veterans Administration Hospital Research Center, Denver, CO
1974-1976	Senior Research Chemist, Stauffer Chemical Company, Eastern Research Laboratories, Dobbs Ferry, NY
1976-1981	Senior Research Scientist, and Principal Research Scientist, Associate, Ford Motor Company, Scientific Research Laboratories, Dearborn, MI
1981-1982	Laboratory Director, O.H. (Oil and Hazardous) Materials Company, Findlay, OH
1982-2003	Associate Professor and Professor, Industrial Health – Environmental Health Sciences Department, University of Michigan, Ann Arbor, MI
July 2003	Emeritus Professor, Industrial Health, University of Michigan http://www.sph.umich.edu/faculty/slih.html

Publications (vinyl chloride, isocyanates, combustible gases, aerosols):

1. Levine, S.P., K.G. Hebel, J.D. Bolton and R.E. Kugel. 1975. Industrial Analytical Chemists and OSHA Regulations for Vinyl Chloride, *Anal. Chem.*, 47, 1075A.
2. Garabrant, D.H. and Levine, S.P. "A Critical Review of The Methods of Exposure Assessment and the Pulmonary Effects of TDI and MDI in Epidemiologic Studies", Chemical Manufacturer's Association, November, 1994.
3. Levine, S.P., Hillig, K.J.D., Dharmarajan, V. 1995. Critical Review of Methods of Sampling, Analysis and Monitoring for TDI and MDI. *Amer. Ind. Hyg. Assoc. J.*, 56: 581-589.
4. Paik, N.W., Levine, S.P., and Schork, M.A. 1994. Intra-Counter, Intra-Laboratory and Inter-Laboratory Variation in Asbestos Counting with Phase-Contrast Microscopy [in Korea]. *Appl. Occup. Environ. Hygiene*, 9: 510-516.
5. Groves, W.A., Hahne, R.M.A., Levine, S.P., and Schork, M.A. 1994. A Field Comparison of Respirable Dust Samplers. *Amer. Ind. Hyg. Assoc. J.*, 55: 748-755.
6. Redinger, C.F., Levine, S.P. Review of Analytical and Monitoring Data Used in the Closure of a Polyurethane Foam Production Facility. Chemical Manufacturers Assoc., Arlington, VA, 2000.
7. Levine, S.P., Redinger, C.F. and Robert, W.P. 2001 Community Exposure Assessment and Intervention Effectiveness at Trinity of America Corporation, Glenola North Carolina. *Amer. Ind. Hyg. Assoc. J.*, 62: 649-657. (polyurethane foam production)
8. Levine, S.P. 2002. Critical Review of Methods for Sampling, Analysis and Monitoring of Vapor Phase Toluene Diisocyanate. *Appl. Occup. Environ. Hyg.* (journal of the ACGIH) 17(12): 878-890.
9. Levine, S.P. and Thornton, J.R., (2004) Requirements for LEL Monitoring During Hazard Surveys for Issuance of Hot Work Permits. *Professional Safety* 49: 31-39

Professional and Public Health Interests

- Exposure Assessment applied to community and workplace air contamination
- Management Systems applied to environmental and occupational safety and health
- Vinyl Chloride Monomer (VCM), Isocyanates and silica in workplace air
- Odors, including methodology for determination of, and applications in metal casting, VCM/PVC production and polyurethane foam production
- Indoor air quality, including office buildings, telephone office buildings and apartment buildings
- Evaluation of product stewardship - risk communication programs, warnings
- International industrial hygiene
- Lower explosive limits (LEL), including measurement of, instrument use and calibration, and root cause analysis of industrial explosions

Teaching:

Professor Levine has taught the University of Michigan graduate course Comprehensive Review of Industrial Hygiene. Modules in this course are:

- ❑ Introduction to IH/IH history
- ❑ Hierarchy of controls
- ❑ US OSHA
- ❑ Toxicology and health effects
- ❑ Occupational exposure limits
- ❑ Biological monitoring
- ❑ Air sampling and monitoring
 - Quality control for sampling and analysis
 - Sampling strategies, risk assessment and statistics
 - Inhalable aerosol sampling
- ❑ Ventilation engineering
- ❑ Personal protection equipment
- ❑ Ionizing radiation
- ❑ Non-ionizing radiation
- ❑ Noise and vibration
- ❑ Risk communication
- ❑ Epidemiology
- ❑ Ethics

These courses have been taught at the University of Michigan on campus program, the on-job/on-campus program, and in a wide variety of countries around the world: Bulgaria, China, Korea, Romania, Saudi Arabia, Serbia, Singapore, and in Hawaii annually through 2007

<http://www.aihahawaii.org/2007cihevent.html>.

He also has taught the University of Michigan graduate course International Management System Standards Applied to the Environment and Occupational Health and Safety. Modules in this course are:

- The Business Case
- Definitions of Key Concepts
- Theory and Practice of Quality Systems
- ISO 9001 Quality System Standard
- ISO 14001 Environmental Quality System Standard
- Quantitative Auditing Systems
- The ISO Audit Process
- Auditing Systems and Root Cause Analysis
- AIHA Occupational Health and Safety Management System
- ACC Responsible Care System
- Hybrid and Sector-Specific Systems
- British 8800 & 18001 Occupational Health and Safety Management Systems
- ILO OHS MS & U.S. ANSI Z-10 OHSS Standards
- Global Applications
- Applications to Small and Medium-Sized Businesses
- ISO Auditor Certification and Conformity Assessment

He has taught the management course, or sections thereof, for three different universities and for several companies in the U.S., Brasil, Singapore, Korea and in Eastern Europe, both in person and via Learnlinc web-based real-time multi-site teaching tools. Both of these courses, and modules from these courses, have been taught in the on campus, on-job/on-campus, and continuing education modes.

Almost all course materials are self-contained and are distributed to the students on a CD with universally readable Acrobat files. Supplemental materials are also included on the CD, along with videotaped lectures as necessary. No course books or course packs are needed, except when copyrighted ISO or national standards must be used for a course.