

# CURRICULUM VITAE

## Lynn Scott McCarty

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Occupation:	Ecotoxicologist	Address:	1115 Quaker Trail Newmarket, Ontario, Canada L3X 3E2
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### EDUCATION

1990	Ph.D., Biology	University of Waterloo, Waterloo, Ontario, Canada
1977	M.Sc., Biology	Brock University, St. Catharines, Ontario, Canada
1974	B.Sc.(Honours), Biology	Brock University, St. Catharines, Ontario, Canada

### EXPERIENCE

**1992 onward** **L.S. McCarty Scientific Research & Consulting**, Kitchener, Oakville, Markham, currently Newmarket.  
**1987-90** Ecotoxicology, environmental & human risk assessment, related scientific consulting including detailed technical analysis/evaluation and expert witness testimony. Projects have included:

Formulate Mixtures Assessment Strategies, for Bayer CropScience (with Applied Pharmacology & Toxicology Inc.); Critical body residue validation for aquatic organisms exposed to chemicals causing toxicity by baseline narcosis, a 3-year European Chemical Industry Council Long-range Research Initiative (CEFIC-LRI) grant to several researchers, administered by Utrecht University; Participation the Industry Coordinating Group (ICG) for CEPA, for C4; Environmental Assessment Audit: Focus on Predictive Accuracy at Four Class I Nuclear Facilities in Canada, for the Canadian Nuclear Safety Commission (subcontractor to AECOM); QA/QC Audit/Evaluation for 18 "CEPA-toxic" CEPA Risk Assessments, for the CEPA ICG; Independent Advisory Panel Report on Implementation of TMDLs for Organochlorine Compounds for Newport Bay, for Orange County, California, with the National Water Research Institute; An evaluation of hexabromocyclododecane (HBCD) for Persistent Organic Pollutant (POP) properties and the potential for adverse effects in the environment, for the European Brominated Flame Retardant Industry Panel; preparation of an Ecological Risk Assessment for Pyridalyl and review of a pesticide risk assessment, for Valent USA; Estimation of Preliminary Site-Specific Water Quality Guidelines Using the Rapid Assessment Approach and Calculation of the Water Quality Index in Support of the Canadian Environmental Sustainability Indicators Report, for Environment Canada (with EcoMetrix Inc.); SETAC Pellston Workshop on PBT/POPs Identification, Toxicology group; Strategic Projects Selection Panel for Healthy Environments and Ecosystems (2007), Natural Sciences and Engineering Research Council of Canada (NSERC);

Modelling Approach for the Estimation of Aquatic Toxicity Data for Severely Toxicological Information Poor Substances (with EcoMetrix Inc.), for Environment Canada; SETAC Pellston Workshop on the Tissue Residue Approach for Toxicity Assessment, Organizing Committee member; Invited expert, Workshop on Ecological Risk Assessment of Air Toxics, US EPA; Member of Strategic Projects Triage Selection Panel for Healthy Environments and Ecosystems (2006), Natural Sciences and Engineering Research Council of Canada (NSERC); Prepared public comments on US EPA's draft "Considerations for Developing Alternative Health Risk Assessment Approaches for Addressing Multiple Chemical, Exposures, and Effects", for the American Chemistry Council; Invited participant Health and Environmental Science Institute In Vitro ADME Bioaccumulation Workshop; Appointed to the Science Advisory Board (SAB) Aquatic Life Criteria Consultative Panel, U.S. Environmental Protection Agency (see EPA-SAB-CON-06-004); External Review of Application, Uncertainty, Assessment Factors Proposal, for Environment Canada; Advice on OECD Aquatic and Terrestrial Hazard Assessment development, for Environment Canada; Research Manager/Advisor (1995-2003) to the Canadian Chlorine Coordinating Committee (C4, now Canadian Chlorine Chemistry Council) including managing a research program (38 projects) granting in excess of \$2 million.

An Ecotoxicological Evaluation of the Alleged Violation of the Canadian Fisheries Act at the Former Moncton Landfill Site Adjacent to the Petitcodiac River, for GEMTEC Ltd; Expert Panel member on Potential Effects of Ethanol-Blend Gasoline for Health Canada; Peer Review Panel member for Bioaccumulation Testing Evaluation Framework for Assessing the Suitability of Dredged Material to be Placed at the Historic Area Remediation Site (HARS) near New York, NY for the U.S. EPA via Battelle; Literature Evaluation of the Toxicity of Mixtures of Chlorinated Chemicals (with C.J. Borgert of Applied Pharmacology and Toxicology Inc.) for the Research Foundation for Health and Environmental Effects. Invited Speaker for the 9th International Congress of Toxicology, July 2001, Brisbane, Australia; Qualitative Assessment of Management Instruments for the Reduction of NP/NPEs in Soap and Cleaning Products and Technical and Socio-Economic Background Study for Nonylphenol and its Ethoxylates (subcontractor for ToxEcology Inc.) for Environment Canada; Review of the CEPA II assessment document for road salt, for Environment Canada; Invited issue paper for Management Objectives for Ecological Risk Assessment, U.S. EPA, Washington DC.

Peer Reviewer of 2000 Update of the Ambient Water Quality Criteria Document for Cadmium and the National Sediment Nonpoint Source Inventory and Assessment and Draft Ambient Water Quality Criteria Derivation Methodology: Human Health for U.S. EPA via Versar Corporation, Springfield VA; Member of Strategic Projects Selection Panel for Environmental Technologies (2000) and Environment and Sustainable Development (2001-02), Natural Sciences and Engineering Research Council of Canada (NSERC), Preparation and Risk Communication of A Review of the Use of Glyphosate in Forest Management in New Brunswick for J.D. Irving Ltd.; Review of Effluent Chlorination and Zebra Mussel Control at the Pickering NGS, for SENES Consultants; Review of Documents Associated with the Bruce Nuclear Used Fuel Dry Storage Facility, for Inverhuron and District Ratepayers Association.

Invited speaker for the Fourth National Health and Environmental Effects Research Laboratory Symposium, US EPA, Cary NC, 1998; Evaluation of a Northern Ontario Gold Mine Effluent, for the Shibogama First Nations Council via Gowling, Strathy & Henderson; Invited expert: Workshop on the Application of 2,3,7,8-TCDD Toxicity Equivalency Factors to Aquatic Life and Wildlife, U.S. EPA, Chicago, 1998. Invited expert for Ecological Risk Management Workshop, Williamsburg, 1997, for SETAC Foundation; Review of the CEPA II assessment documents for acetaldehyde, formaldehyde, 1,3-butadiene (also developed the document format and edited the initial draft) and hexachlorobutadiene, for Environment Canada; Invited speaker at the U.S. EPA's first National Sediment Bioaccumulation Workshop; retainer (1996-97) for Senior Toxicological Services to Golder Associates Ltd.; Scientific Advisor (1995-96) to the Canadian Chemical Producers' Association (CPPA); Invited review of Guidance Manual: Ecological Risk Assessments of Priority Substances Under the Canadian Environmental Protection Act, for Environment Canada.

A Review of Air Quality in Saint John, New Brunswick for JD Irving Ltd; Development of 14 Ontario air quality guidelines based on values established by other agencies, for Ontario Ministry of the Environment; Invited expert: Interpreting the Consequences of Bioaccumulation, Denver, 1995, for US Army Corps of Engineers and US EPA; Review of a residue-based risk assessment/ecological injury estimation (NDRA & CERCLA) for PAHs from a marine petroleum spill, for ENTRIX Inc., Sacramento CA; Revision of Canadian Water Quality Guidelines for Chlorinated Benzenes, for CCME & Environment Canada; An Ecotoxicological Evaluation of a Wastewater Spill at NFRP, Thorold ON, for Noranda Forest Recycled Papers; Advice on Site Investigation and Risk Assessments of RCAF Dump & Petroleum Contaminated Site at Department of National Defence Goose Bay Airbase, for Klohn-Crippen Consultants Ltd. and for Beatty Franz Ltd.; Invited presentation on risk assessment/management of biological control agents, for Canadian Forestry Service.

Invited expert: Delphi Exercise on Evaluation of Bioaccumulation Data for Ocean Disposal of Sediments, Boston, 1994, for US Environmental Protection Agency and U.S. Army Corps of Engineers; Invited participant: 17th Pellston Workshop "Environmental Risk Assessment for Organochlorine Chemicals", SETAC Foundation, July, 1994; Advice on aquatic portion of the risk assessment for the proposed Halifax-Dartmouth Municipal Incinerator, for Jacques Whitford Associates; Canadian guideline review for response to the US EPA's Proposed Great Lakes Water Quality Guidance for the Great Lakes System, for Environment Canada; Animal Cancer Bioassay Quality Criteria for Electromagnetic Field (EMF) Risk Assessment Methodology, for the Institute for Risk Assessment; An Ecotoxicological Evaluation of a Whitewater Spill at the Fraser Inc. Pulp Mill, Edmundston NB, for Stewart McKelvey Sterling Scales.

Review of the Registration Status/Fenitrothion Risk Assessment, for Forest Protection Ltd., Moncton NB; presentation/report to the Environmental Assessment Review Panel of Ecotoxicological Aspects of Chlorination of Effluent from the proposed Halifax-Dartmouth Sewage Treatment Plant, for Jacques Whitford Associates; Review of the Proposed Protocol on the Derivation and Use of Canadian Tissue Residue Guidelines for the Protection of Wildlife; and invited reviews of the CEPA assessment documents for hexachlorobenzene and for PAHs (in French), for Environment Canada. Invited participant: 13th Pellston Workshop "A Mechanistic Understanding of Bioavailability: Physical-Chemical Interactions", SETAC Foundation, August, 1992.

QSAR modelling of the toxicity of some organic chemicals, for Lakehead University (*awarded 1990 Ontario MOE Excellence in Research - Water Quality*); CESARS, Ontario MOE and Michigan DNR computerized chemical dossiers, for MacLaren-Plansearch Inc.; Development of Ontario Provincial Water Quality Guidelines for: Chlorinated Dioxins & Furans, Chlorinated Ethanes & Ethylenes, and Polynuclear Aromatic Hydrocarbons (PAHs), for MacLaren-Plansearch Inc.; Review of pesticide effects for a Class Environmental Assessment (Ontario Forest Industry Association), for Beak Consultants Ltd. Attended 1988 Mid-America Toxicology Course in Kansas City, USA.

**1990-92 CanTox Inc.** Consultants in Toxicology, Oakville & Mississauga, Ontario  
Senior Scientist. Projects included:

Review of the Toxicology of Chlorine & Chlorinated Products: Human & Environmental Health, for the Chlorine Institute; Evaluation (in French) of the Chimiotox Model for Effluent Assessment (St. Lawrence Action Plan), for Alcan Smelters & Chemicals Ltd.; Toxicological Evaluation of 'Hazards of Incineration: A Report to the City of Orillia by the Physicians of Orillia, for Ogden Martin Systems Ltd; risk assessments of dioxins-furans in recycle mill paper wastes used as soil conditioners, for Fasken Campbell Godfrey (Braemar Acres Ltd.) and for the Quebec & Ontario Paper Company; Sources, Fate, and Risk Assessment of Dioxins and Furans in Howe Sound, BC, for McCarthy Tetrault and Ladner Downs (for CanFor Inc. & Western Pulp and Paper Inc.); exposure/hazard assessments for soils

contaminated with organics and/or metals, for G.E. Canada, Cyanamide Canada Inc., and the City of Toronto Housing Department; Risk Assessment of an Antimony Trioxide Facility at Lake George, for New Brunswick DOE.

**1984-87 Ontario Ministry of Labour**, Toronto, Ontario

Scientific Consultant, Health Studies Service, Special Studies and Services Branch.

Provided scientific advice on human health hazards. Projects included:

Ambient Air Quality Guidelines prepared for: ethyl ether, n-alkyl toluene sulfonamide, methyl methacrylate, ethylene diamine tetraacetic acid, calcium carbide, nitrous oxide, thiourea, xylene (review) hexachlorocyclopentadiene, isobutyl isobutyrate, diacetone alcohol, and sodium bisulphite. Evaluated toxicants at Brock West Landfill, Hamilton Sewage Treatment Plant, and St. Julian Park (London).

**1980-84 Lavalin (MacLaren Plansearch Inc. and J.F. MacLaren Ltd.)** Toronto

Manager, Ecological Studies Group; Environmental Scientist, Toxic Contaminants Specialist.

Responsibilities included project management and administration. Projects included:

Documents in the Guidelines for Surface Water Quality series: Hexachlorobutadiene, Phthalic Acid Esters, and Uranium, for Environment Canada. Criteria Document for Standard Development No. 3-84, a Provincial Water Quality Objective for chlorinated benzenes, for the Ontario Ministry of the Environment. Environmental assessment of aquatic/terrestrial impacts of metals, PCBs, dioxin & sulphur dioxide, from a proposed Energy from Waste (sewage sludge/refuse) plant in London, Ont., for the Victoria Hospital Corp. Preparation of human health & aquatic toxicity objectives for the Niagara River based on organic & inorganic loadings in New York State Pollutant Discharge Elimination System (SPDES) permits (Occidental Chemical Corp. (Hooker Chemicals), Buffalo's Bird Island WWTP, Wheatfield Country WWTP, Allied Chemicals Ltd., Olin Corp., Dupont Ltd. & PVS Ltd), for the Ontario Ministry of the Environment. Study of microbiological contamination in Lac Phillippe, Gatineau Park, for the National Capital Commission.

A baseline biological inventory, fisheries assessment, & contaminant evaluation of lakes near uranium mine tailings near Elliot Lake, for Rio Algom Ltd. Fishery & aquatic resource component of Watershed Management Studies, for the South Nation River Conservation Authority and for the Raisin River Conservation Authority. Route Selection/Environmental Impact Assessment (fishery & aquatic resources) of a road extension (Wollaston Lake to Stony Rapids), for the Department of Northern Saskatchewan. Identification of sensitive areas/organisms, possible impacts, & development of oil spill contingency plans for St. Clair/Detroit Rivers & St. Marys River, for the Petroleum Industry Marine Environmental Co-operative. Multi-year terrestrial and aquatic monitoring of containment of mercury-contaminated dredge spoils at Southeast Bend Cutoff, Seaway Island, St. Clair River, for Public Works Canada.

Route selection and Environmental Impact Assessment for a natural gas pipeline from Hamilton to Nanticoke, Ontario, for Union Gas Ltd. Asbestos removal inspector at the Alta Vista Postal Station, Ottawa, for Canada Post Corporation. Environmental inspector for construction on the Niagara Loop Natural Gas Pipeline, for TransCanada PipeLines Ltd. Assessment of aquatic impact and suggested mitigatory measures for a pipeline crossing of the Ottawa River, for Consumers Gas Ltd. and TransCanada PipeLines Ltd.; for the St. Marys to Beachville extension, for Union Gas Ltd. Assessment of the impact of the Pickering "A" Nuclear Generating Station on the aquatic environment of Lake Ontario (with F.E.J. Fry), for Ontario Hydro. Assessment of the impacts on the fishery and aquatic resources of the St. John River and Estuary associated with the Dickey-Lincoln School Lakes Hydro-electric Project, for U.S. Army Corps of Engineers.

**1978-80 Biology Department, University of Winnipeg**, Manitoba, Canada

Laboratory Instructor in introductory biology, human and animal anatomy and physiology.

**1978-79 Urangesellschaft Canada Limited**, Toronto, Ontario, Canada

Summers Party Chief in an environmental assessment and biological baseline study (aquatic & terrestrial, primarily caribou) of uranium-rich sites near Baker Lake, N.W.T.; with Dr. A.W.F. Banfield.

**1972-76 Brock University**, St. Catharines, Ontario, Canada

Laboratory Demonstrator (part-time), Biology Department

**1972-73 Environment Canada**, Insect Pathology Research Institute, Sault St. Marie, Ontario, Canada

Summers Research Technician, insect biochemistry/physiology.

## **PROFESSIONAL AND ACADEMIC ASSOCIATIONS**

Peer reviews include: ASTM Environmental Toxicology & Risk Assessment Publications; Aquatic Toxicology; Australian Journal of Marine and Freshwater Research; Canadian Centre for Occupational Health and Safety; Canadian Environmental Protection Act documents (Environment Canada); Chemosphere; Comparative Biochemistry and Physiology; Environmental Pollution; Environmental Toxicology & Chemistry; Environmental Science & Technology; Ecotoxicology & Environmental Safety; Hydrobiologia; Human and Ecological Risk Assessment; Journal of Aquatic Ecosystem Stress and Recovery; Journal of Toxicology and Environmental Health; Marine Environmental Research; Massachusetts Bay Program (project proposals); Proceedings of the National Academy of Sciences of the USA; Regulatory Toxicology & Pharmacology; Science of the Total Environment; US Environmental Protection Agency; US Depart. Commerce, National Marine Fisheries Service.

Member of the Editorial Board of *Human and Ecological Risk Assessment* (HERA).

Past editorial board member of *Journal of Aquatic Ecosystem Stress and Recovery*.

Adjunct Professor, Department of Biology, University of Waterloo (1998-2003). Served on 2 Ph.D. Committees.

## PUBLICATIONS IN PEER-REVIEWED JOURNALS AND MONOGRAPHS

- McCarty LS, 2012. Model Validation in Aquatic Toxicity Testing: Implications for Regulatory Practice. *Regul. Toxicol. Pharmacol.* 63 (3): 353-362.
- McCarty LS, CJ Borgert, EM Mahaich, 2012. Information Quality in Regulatory Decision-making: Peer Review Versus Good Laboratory Practice. *Environ Health Perspect.* 120 (7): 927-934.
- Borgert CJ, EV Sargent, G Casella, DR Dietrich, LS McCarty, RJ Golden, 2012. The Human Relevant Potency Threshold: Reducing Uncertainty by Human Calibration of Cumulative Risk Assessments. *Regul Toxicol Pharmacol* 62(2):313-318.
- Marvin, CH, GT Tomy, JM Armitage, JA Arnot, LS McCarty, A Covaci, V Palace, 2011. Hexabromocyclododecane: Current Understanding of Chemistry, Environmental Fate and Toxicology and Implications for Global Management. *Environ Sci Technol.* 45(20):8613-6232.
- Arnot, JA, JM Armitage, LS McCarty F Wania, IT Cousins, L Toose-Reid, 2011. Towards a consistent evaluative framework for POP risk characterization. *Environ Sci Technol* 45(1): 97-101.
- Meador, JP, WJ Adams, BI Escher, LS McCarty, AE McElroy, KG Sappington, 2011. The Tissue Residue Approach for Toxicity Assessment: Findings and Critical Reviews from a Society of Environmental Toxicology and Chemistry Pellston Workshop. *Integr Environ Assess Manag* 7(1): 2-6.
- McCarty, LS, PF Landrum, SM Luoma, JP Meador, AA Merten, BK Shephard, AP van Wezel, 2011. Advancing environmental toxicology through chemical dosimetry: external exposures versus tissue residues. *Integr Environ Assess Manag* 7:7-22.
- Solomon, K, PA Dohmen, A Fairbrother, M Marchand, LS McCarty, 2009. Use Of (Eco)Toxicity Data as Screening Criteria for the Identification and Classification of PBT/POP Compounds *Integr Environ Assess Manag* 5(4):680-696.
- Meador, JP, LS McCarty, BI Escher, WJ Adams, 2008. The tissue-residue approach for toxicity assessment: concepts, issues, application, and recommendations. *J Environ Monit* 10:1486-1498.
- McCarty, LS, 2008. Body Residues. IN SE Jorgensen and BD Fath (Editor-in-Chief), *Ecotoxicology*. Vol. 1 of *Encyclopedia of Ecology*, pp. 475-477 Oxford: Elsevier
- Forristal, PM, DL Wilke, LS McCarty, 2008. Improving the quality of risk assessments in Canada using a principle-based approach. *Regul Toxicol Pharmacol* 50:336-344.
- McCarty, LS and CJ Borgert, 2006. Review of the toxicity of chemical mixtures: theory, policy, and regulatory practice. *Regul Toxicol Pharmacol* 45:119-143
- McCarty, LS and CJ Borgert, 2006. Review of the toxicity of mixtures containing at least one organochlorine. *Regul Toxicol Pharmacol* 45:104-118
- Power, M and L McCarty, 2006. Environmental risk management decision-making in a societal context. *Human Ecol Risk Assess* 12:18-27.
- Borgert, CJ, TF Quill, LS McCarty, AM Mason, 2004. Can mode of action predict mixtures toxicity for risk assessment? *Toxicol Appl Pharmacol* 201:85-96.
- Webster, E, CE Cowan-Ellsberry, L McCarty, 2004. Putting science into PBT evaluations. *Environ Toxicol Chem* 23(10): 2473-2482.
- McCarty, LS, 2002. Issues at the interface between ecology and toxicology. *Toxicology* 181-182C:497-503.
- Power, M, LS McCarty, 2002. Trends in the development of ecological risk assessment and management frameworks. *Human Ecol Risk Assess* 8(1):7-18
- McCarty, LS, M Power, KR Munkittrick, 2002. Bioindicators versus biomarkers in ecological risk assessment *Human Ecol Risk Assess* 8(1):159-164.
- Mackay, D, LS McCarty, M MacLeod, 2001. On the validity of classifying chemicals for persistence, bioaccumulation, toxicity and potential for long range transport. *Environ Toxicol Chem* 20(7)1491-2001.
- McCarty, LS, M Power, 2000. Approaches to developing risk management objectives: an analysis of international strategies. *Environ Sci Policy* 6:311-319.
- Vigerstad, T, LS McCarty, 2000. The ecosystem paradigm and environmental risk management. *Human Ecol Risk Assess* 6:369-381.
- Power, M and LS McCarty, 2000. Using risk-cost trade-offs in environmental risk management decision-making. *Environ Sci Policy* 3:31-38.
- Power, M, LS McCarty, 1998. A comparative analysis of environmental risk assessment/risk management frameworks. *Environ Sci Technol* 32:221A-231A.
- Carey, J, P Cook, J Giesy, P Hodson, D Muir, J Owens, K Solomon, U Alborg, D Allen, K Ballschmiter, T Bidleman, R Boethling, J Clark, J DePinto, G Dickson, R Erickson, H Fielder, M Fournier, M Gilbertson, F Gobas, T Green, A Grimvall, P Howard, B Jansson, P Jones, R Kimmerle, D Mackay, F Mayer, L McCarty, K Munkittrick, R Norstrom, M Olsson, R Parrish, R Peterson, C Rappe, R Reitz, M Salkinoha-Salonen, W Schmidt, D Sijm, J Stein, K Stromborg, T Shinsuke, ThEM ten Hulscher, T Tillitt, M van den Berg, G Van Der Kraak, G Veith, E Voldner, P Watanabe, R Wentsel, M Zeeman, 1998. *Ecotoxicological Risk Assessment of the Chlorinated Organic Chemicals*. Society of Environmental Toxicology & Chemistry, Pensacola FL. 397 p.
- Power, M, LS McCarty, 1997. Fallacies in ecological risk assessment practices. *Environ Sci Technol* 31(8):370A-375A. Rebuttal to Letters to the Editor: *Environ Sci Technol* 32:117A-118A, 1998.
- McCarty, LS, M Power, 1997. Environmental risk assessment within a decision-making framework. *Environ Toxicol Chem.* 16:122-123.
- Lanno, RP and LS McCarty, 1997. Earthworm bioassays: adopting techniques from aquatic toxicity testing. *Soil Biol Biochem* 3/4:693-697.
- Power, M and LS McCarty, 1996. Probabilistic risk assessment: betting on the future. *Human Ecol Risk Assess* 2:30-34.

- McCarty, LS, KR Munkittrick, 1996. Environmental biomarkers in aquatic toxicology: fiction, fantasy, or functional? *Human Ecol Risk Assess* 2:268-274.
- McCarty, LS, M Power, 1995. The comparability of human and environmental risk assessments. *Human Ecol Risk Assess* 1:489-494.
- Hickie, BE, LS McCarty, DG Dixon, 1995. Development and testing of a residue-based toxicokinetic model for predicting acute aquatic toxicity from pulse exposures. *Environ Toxicol Chem* 14:2187-2197.
- Bourchier, RS and LS McCarty, 1995. Risk assessment of biological control (predators and parasitoids). *Entomol Soc Can Bull* 27:126-138.
- Munkittrick, KR and LS McCarty, 1995. An integrated approach to ecosystem health management: top-down, bottom up or middle-out? *J Aquat Ecosys Health* 4:77-90.
- Rand, PG Wells, LS McCarty 1995. Chapter 1: Introduction to Aquatic Toxicology. *IN* *Fundamentals of Aquatic Toxicology II*, GM Rand (ed). Taylor and Francis, Bristol PA.
- Spacie A, LS McCarty, GM Rand, 1995. Chapter 16: Bioaccumulation in Multi-phase Systems. *IN* *Fundamentals of Aquatic Toxicology II*, GM Rand (ed). Taylor and Francis, Bristol PA.
- Landrum PL, WL Hayton, H Lee II, LS McCarty, D Mackay, J McKim, 1994. Chapter 3: Synopsis of Discussion Session on the Kinetics Behind Environmental Bioavailability. *IN* *Bioavailability: Physical, Chemical, and Biological Interactions*, JL Hamelink, PF Landrum, HL Bergman, & W Benson (eds). SETAC Pellston Workshop Series, Lewis Publishers, Boca Raton FL.
- McCarty LS, 1994. Chlorine and Organochlorines in the Environment: A Perspective. *Canadian Chemical News* 43 (Mar.):22-25.
- McCarty LS, D Mackay, 1993. Enhancing ecotoxicological modeling and assessment: critical body residues and modes of toxic action. *Environ Sci Technol* 27:1719-1728.
- McCarty LS, D Mackay, AD Smith, GW Ozburn, DG Dixon, 1993. Residue-based interpretation of toxicity and bioconcentration QSARs from aquatic bioassays: polar narcotic organics. *Ecotox Environ Safety* 24:253-270.
- Lupp M, LS McCarty, PRH Schaap, PA Miller, R Angelow, T Fletcher, D Spry, 1993. Scientific Criteria Document for the Development of Provincial Water Quality Guidelines for Chlorinated Ethanes and Chlorinated Ethylenes. Ontario Ministry of the Environment and Energy, Toronto ON.
- McCarty LS, GW Ozburn, AD Smith, DG Dixon, 1992. Toxicokinetic modelling of mixtures of organic chemicals. *Environ Toxicol Chem* 11:1037-1047.
- McCarty LS, D Mackay, AD Smith, GW Ozburn, DG Dixon, 1992. Residue-based interpretation of toxicity and bioconcentration QSARs from aquatic bioassays: neutral narcotic organics. *Environ Toxicol Chem* 11:917-930.
- Mackay D, H Puig, LS McCarty, 1992. An equation describing the time course and variability in uptake and toxicity of narcotic chemicals to fish. *Environ Toxicol Chem* 11:941-951.
- McCarty LS, D Mackay, AD Smith, GW Ozburn, DG Dixon, 1991. Interpreting Aquatic Toxicity QSARs: the significance of toxicant body residues at the pharmacologic endpoint. *Science of the Total Environment*, Special Issue: QSAR in Environmental Toxicology 109:515-525.
- Van den Heuvel MR, LS McCarty, RP Lanno, B Hickie, DG Dixon, 1991. Effect of total body lipid on the toxicity and toxicokinetics of pentachlorophenol in rainbow trout (*Oncorhynchus mykiss*). *Aquat Tox* 20:235-252.
- McCarty LS, 1991. Toxicant Body Residues: Implications for Aquatic Bioassays. *IN* 14th Symposium on Aquatic Toxicology & Risk Assessment, M Mayes, M Barron (eds). ASTM, Philadelphia PA pp 183- 192.
- Smith AD, A Bharath, C Mallard, D Orr, K Smith, JA Sutton, J Vukmanich, LS McCarty, GW Ozburn, 1991. The acute and chronic toxicity of 10 chlorinated organics compounds to the American flagfish, *Jordanella floridae* (Good and Bean). *Arch Environ Contam Toxicol* 20:94-102.
- Smith AD, A Bharath, C Mallard, D Orr, LS McCarty, GW Ozburn, 1990. Concentration kinetics of some chlorinated benzenes and chlorinated phenols in American Flagfish, *Jordanella floridae* (Goode and Bean). *Chemosphere* 20:379-386.
- McCarty LS, GW Ozburn, AD Smith, A Bharath, D Orr, DG Dixon, 1989. Hypothesis formulation and testing in aquatic bioassays: a deterministic model approach. *Hydrobiologia* 188/189:533-542.
- Abernethy S, D Mackay, LS McCarty, 1988. 'Volume fraction' correlation for narcosis in aquatic organisms: the key role of partitioning. *Environ Toxicol Chem* 7:469-481.
- McCarty LS, 1987. Relationship Between Toxicity and Bioconcentration for Some Organic Chemicals: I Examination of the Relationship *IN* QSAR in Environmental Toxicology-II, KLE Kaiser (ed). D Reidel Publishing Co, Dordrecht, NL, pp 207-220.
- McCarty LS, 1987. Relationship Between Toxicity and Bioconcentration for Some Organic Chemicals: II Application of the Relationship *IN* QSAR in Environmental Toxicology-II, KLE Kaiser (ed). D Reidel Publishing Co, Dordrecht, NL, pp 221-229.
- McCarty LS, 1986. The relationship between aquatic toxicity QSARs and bioconcentration for some organic chemicals. *Environ Toxicol Chem* 5:1071-1080.
- McCarty LS, PV Hodson, GR Craig, KLE Kaiser, 1985. On the use of Quantitative Structure/Activity Relationships to predict the acute and chronic toxicity of chemicals to fish. *Environ Toxicol Chem* 4:595-606.
- McCarty LS, M Lupp, M Shea, 1984. Chlorinated Benzenes in the Aquatic Environment. Scientific Criteria Document for Standard Development No 3-84. Ontario Ministry of the Environment, Toronto.
- Lupp, M, LS McCarty, 1983. Phthalic Acid Esters *IN* Guidelines for Surface Water Quality, Volume 2, Organic Chemical Substances. (MC Taylor, editor). Environment Canada, Ottawa ON.
- McCarty LS, 1983. Hexachlorobutadiene *IN* Guidelines for Surface Water Quality, Volume 2, Organic Chemical Substances. (MC Taylor, editor). Environment Canada, Ottawa ON.

- McCarty LS, JAC Henry, AH Houston, 1978. Toxicity of cadmium to goldfish (*Carassius auratus*) in hard and soft water. *J Fish Res Bd Can* 35:35-42.
- Houston AH, and LS McCarty, 1978. Carbonic anhydrase (acetazolamide-sensitive esterase) activity in the blood, gill & kidney of thermally-acclimated rainbow trout (*Salmo gairdneri*). *J Exp Biol* 73:15-27.
- McCarty LS, and AH Houston, 1977. (Na/K) and (HCO<sub>3</sub>) stimulated ATPase activities in the gills and kidneys of thermally-acclimated rainbow trout, (*Salmo gairdneri*). *Can J Zool* 55:704-714.
- Grant GC, and LS McCarty, 1977. Effect of age on calling behaviour and mating success of whitemarked tussock moths. *Bi-monthly Research Notes*, 33:2-3.
- McCarty LS, and AH Houston, 1976. Effects of exposure to sublethal levels of cadmium upon water electrolyte status in the goldfish (*Carassius auratus*). *J Fish Biol* 9:11-19.

## OTHER PUBLICATIONS AND REPORTS

In addition to dozens of oral and poster presentations at scientific conferences, meetings, and workshops around the world.

- Arnot, JA, LS McCarty, J Armitage, L Toose-Reid, F Wania, I Cousins, 2009. An evaluation of hexabromocyclododecane (HBCD) for Persistent Organic Pollutant (POP) properties and the potential for adverse effects in the environment. Prepared for the European Brominated Flame Retardant Industry Panel (EBFRIP), Brussels and submitted to the UN ECE POP RC.
- McCarty, LS and JA Arnot, 2008/09. Ecological Risk Assessment for Pyridalyl. A presentation to FIFRA SAP on selected issues associated with the risk assessment process for pesticides with P, B, and T characteristics. Report and oral presentation to FIFRA, U.S. EPA, prepared for Valent USA.
- McCarty, LS and CJ Borgert, 2006. Comments on "Considerations for Developing Alternative Health Risk Assessment Approaches for Addressing Multiple Chemical, Exposures, and Effects". EPA/600/R-06/013A, External Review Draft, March 31, 2006. Submitted to U.S. EPA during public comment period. Prepared for the American Chemistry Council, Washington DC.
- Power, M and LS McCarty, 2001. "Trends in the Development of Ecological Risk Assessment and Management Frameworks." *IN: Proceedings of the Second International Symposium on Ionizing Radiation*, May, 1999, Atomic Energy Control Board of Canada, pp. 114-123.
- Campbell, PM, LS McCarty, W Holm, 2000. Technical and Socio-Economic Background Study for Nonylphenol and Its Ethoxylates. Prepared for Environment Canada, Regulatory and Economic Analysis Branch by ToxEcology Environmental Consulting Ltd as part of the PSL II Assessment. K0821-0-0021, 127 p.
- McCarty, LS, 2000. A Review of the Use of Glyphosate in Forest Management in New Brunswick. Prepared for J.D. Irving Ltd., Saint John NB. 70 p.
- "Trends in the Development of Ecological Risk Assessment and Management Frameworks" Keynote presentation at the Second International Symposium on Ionizing Radiation, Atomic Energy Control Board, Ottawa, May/99.
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