

EDUCATION

Sc.D. Harvard School of Public Health, Boston, MA, Environmental Health, 1995
M.S. Indiana University, Bloomington, IN, Environmental Science, 1991
B.S. Indiana University, Bloomington, IN, Decision Science, 1985

PROFESSIONAL AFFILIATIONS

International Society of Exposure Analysis
Membership and Web Committee, 2008
Membership Committee Chair, 2003-2008
Councilor, 2003-2006
Nominations Committee Chair, 1998-2001
Member, 1995-
Air and Waste Management Association
Member, 2003-
Society for Risk Analysis
Member, 2005-
American Public Health Association
Member, 2008-

BACKGROUND SUMMARY

2007- Instructor of Environmental Management, Harvard Extension School, Cambridge, MA
2005- Principal Scientist and Associate Director of Advanced Analytics, Environmental Health & Engineering, Inc.
2005- Adjunct Associate Professor of Environmental Studies, Brandeis University, Waltham, MA
2002-2005 Principal Scientist, Environmental Health & Engineering, Inc., Newton, MA
2001-2002 Associate Professor (Tenured), Department of Environmental Health Science, University of Georgia, Athens, GA
1996-2001 Assistant Professor, Department of Environmental Health Science, University of Georgia, Athens, GA
1996-2002 Adjunct Assistant Professor, Department of Environmental and Occupational Health, Emory University, Atlanta, GA
1995-1996 Research Associate, Department of Environmental and Occupational Health, Emory University, Atlanta, GA

PROFESSIONAL SERVICE

National Nanotechnology Coordination Office
Session Co-Chair, Human and Environmental Exposure Workshop, National Science and Technology Council, National Nanotechnology Initiative, Bethesda, Maryland, 2009

U.S. Environmental Protection Agency

Member, Peer Review Panel, Human Exposure and Atmospheric Sciences Division, U.S. National Exposure Research Laboratory, 2008

Panel Member, Benzene Peer Consultation, Voluntary Children's Chemical Evaluation Program, 2006

Member, FIFRA Science Advisory Panel, 2003-2005

Review Panel Member, Aggregate Exposure Model Companion Workshop, 2002

Review Panel Member, Dietary Exposure Research—Future Steps, 2002

Member, FIFRA Science Advisory Panel, 2000

Invited Participant, Workshop on NHEXAS data analysis, 1999

World Health Organization

First Draft Author, *Public Health Management of Chemical Incidents*, World Health Organization, Geneva, in press

Instructor, WHO Training on Public Health Management of Chemical Incidents and Emergencies, Beijing, China, April 26-27, 2007

Technical Advisor, Pediatric Dental Fluorosis and Mt. Nyiragongo, Democratic Republic of Congo, 2006-

Technical Advisor, Pesticide Exposure Assessment in Somalia, 2003

Contributor, Report on Global Burden of Air Pollution, 2000

First Draft Author, *Environmental Health Criteria 214: Human Exposure Assessment*, International Programme on Chemical Safety, World Health Organization, Geneva, 2000

Chair, Environmental Health Criteria on Human Exposure Assessment Editorial Committee, 1998

Rapporteur, Task Group Meeting for the Environmental Health Criteria on Human Exposure Assessment, 1998

Chair, Exposure Assessment Textbook Committee, 1996

National Institute for Environmental Health Sciences

Invited Participant, Workshop on Human Exposure Assessment, Washington, DC, 1999

International Life Sciences Institute

Invited Participant, Generalizing and Utilizing Aggregate Residential Exposure Data—A Conversation between Regulators, Modelers, and Research Scientists, 2003

Invited Participant, Information Sharing Workshop on Aggregate Exposure Models, 1999

PUBLICATIONS

MacIntosh D, Minegishi T, Kaufman M, Baker B, Allen J, Levy J, Myatt T. 2009. Mitigation of asthma triggers in indoor air: An inter-comparison of ventilation/filtration options for residences. *Journal of Exposure Science and Environmental Epidemiology*. In Press.

MacIntosh DL, Ludwig JF, Baker BJ, Suh HH, Myatt, TA, Spengler JD. 2008. Whole House Particle Removal and Clean Air Delivery Rates for In-Duct and Portable Ventilation Systems. *Journal of the Air and Waste Management Association*, 58:1474-1482.

Myatt, TA, Minegishi T, Allen JG, **MacIntosh DL**. 2008. Control of asthma triggers in indoor air: a modeling analysis. *Environmental Health*, 7:43 (August 2008).

McDevitt JJ, **MacIntosh DL**, Myatt TA. 2008. Removal of influenza viral aerosols by high efficiency electrostatic air cleaner and implications for household infect transmission. *Indoor Air*, accepted for publication May 9, 2008.

MacIntosh DL, Brightman HS, Baker BJ, Myatt TA, Stewart JH, McCarthy JF. 2006. Airborne fungal spores in a cross-sectional study of office buildings. *Journal of Occupational and Environmental Hygiene*. 3:379-389.

Moglia D, Smith A, **MacIntosh DL**, Somers JL. 2006. Prevalence and implementation of IAQ programs in U.S. schools. *Environmental Health Perspectives*, 114(1):141-146.

Bird M, **MacIntosh DL**, Williams PL. 2004. Occupational exposure during routine activities in coal-fueled power plants. *Journal of Occupational and Environmental Hygiene* 1(6):403-413.

Pang Y, **MacIntosh DL**, Camann DE, Ryan PB. 2002. Analysis of aggregate exposure to chlorpyrifos in the NHEXAS-Maryland investigation. *Environmental Health Perspectives*, 110(3):235-240.

Yanosky JD, Williams PL, **MacIntosh DL**. 2002. A comparison of two direct-reading aerosol monitors with the federal reference method for PM_{2.5} in indoor air. *Atmospheric Environment*, 36:107-113.

Echols SE, **MacIntosh DL**, Ryan PB. 2001. Temporal patterns of activities potentially related to pesticide exposure. *Journal of Exposure Analysis and Environmental Epidemiology*, 11(5):389-397.

MacIntosh DL, Kabiru C, Ryan PB. 2001. Longitudinal investigation of dietary exposure to selected pesticides. *Environmental Health Perspectives*. 109(2):145-150.

Ryan PB, Scanlon KA, **MacIntosh DL**. 2001. Analysis of dietary intake of selected metals in NHEXAS-Maryland investigation. *Environmental Health Perspectives*. 109(2):121-128.

Collins MJ, Williams PL, **MacIntosh DL**. 2001. Ambient air quality at the site of a former manufactured gas plant. *International Journal of Environmental Monitoring and Assessment*. 68(2):137-152.

Yanosky JD, and **MacIntosh DL**. 2001. A comparison of four gravimetric fine particle sampling methods. *Journal of the Air and Waste Management Association*. 51:878-884.

Middendorf, PJ, **MacIntosh DL**, Tow LV, Williams PL. 2001. Performance of electronic flow rate meters used for calibration of air sampling pumps. *Journal of the American Industrial Hygiene Association*. 62(4):472-476.

Pang Y, **MacIntosh DL**, Ryan PB. 2001. Longitudinal investigation of aggregate oral intake of copper. *Journal of Nutrition*. 131:2171-2176.

MacIntosh DL, Kabiru C, Echols SL, Ryan PB. 2001. Dietary exposure to chlorpyrifos and associations with 3,5,6-trichloro-2-pyridinol in urine. *Journal of Exposure Analysis and Environmental Epidemiology*. 11(4):279-285.

Walker KD, Evans JS, **MacIntosh DL**. 2001. Use of expert judgment in exposure assessment Part I: Characterization of personal exposure to benzene. *Journal of Exposure Analysis and Environmental Epidemiology*. 11(4):308-322.

Tolbert P, Mulholland J, **MacIntosh DL**, Xu F, Daniels D, Devine O, Carlin B, Butler A, Nordenberg, White M. 2000. Air quality and pediatric emergency room visits for asthma in Atlanta. *American Journal of Epidemiology*. 151:798-810.

MacIntosh DL, Kabiru C, Scanlon K, Ryan PB. 2000. Longitudinal investigation of exposure to arsenic, cadmium, chromium, and lead via beverage consumption. *Journal of Exposure Analysis and Environmental Epidemiology*. 10(2):196-205.

Ryan PB, Huet N, **MacIntosh DL**. 2000. Longitudinal investigation of exposure to arsenic, cadmium, and lead via drinking water. *Environmental Health Perspectives*. 108(8):731-735.

MacIntosh DL, Zimmer-Dauphinee SA, Manning RO, Williams PL. 2000. Aldehyde concentrations in ambient air of coastal Georgia, USA. *International Journal of Environmental Monitoring and Assessment*. 63:409-429.

Owens J, Dickerson S, **MacIntosh DL**. 2000. Demographic covariates of residential recycling efficiency. *Environment and Behavior*. 32(5):637-650.

Van Vreede K, **MacIntosh DL**, Black M. 1999. Estimating time-to-gravid for freshwater mussels following temperature conditioning in the laboratory. *Environmental Toxicology and Chemistry*. 18(7):1469-1473.

MacIntosh DL, Hammerstrom K, Ryan PB. 1999. Longitudinal exposure to selected pesticides in drinking water. *Human and Ecological Risk Assessment*. 5(3):575-588.

Whitaker LS, **MacIntosh DL**, Williams PL. 1999. Employee exposure to diesel exhaust in the electric utility industry. *American Industrial Hygiene Association Journal*. 60(5):635-640.

MacIntosh DL, Needham LL, Hammerstrom KA, Ryan PB. 1999. A longitudinal investigation of selected pesticide metabolites in urine. *Journal of Exposure Analysis and Environmental Epidemiology*. 9(5):494-501.

Scanlon KA, **MacIntosh DL**, Hammerstrom KA, Ryan PB. 1999. A longitudinal investigation of solid-food based dietary exposure to selected elements. *Journal of Exposure Analysis and Environmental Epidemiology*. 9(5):485-493.

Echols SL, **MacIntosh DL**, Hammerstrom KA, Ryan PB. 1999. Long-term average microenvironmental time budgets in Maryland. *Journal of Exposure Analysis and Environmental Epidemiology*. 9(5):502-512.

MacIntosh DL, Williams PL, Hunter DJ, Sampson LA, Morris SC, Willett WC, Rimm EB. 1997. Evaluation of a food frequency questionnaire-food consumption approach for estimating dietary intake of inorganic arsenic and methylmercury. *Cancer Epidemiology, Biomarkers, and Prevention*. 6:1043-1050.

MacIntosh DL, Spengler JD, Ozkaynak H, Ryan PB. 1996. Dietary exposures to selected metals and pesticides. *Environmental Health Perspectives*. 104(2):202-209.

MacIntosh DL, Xue J, Ozkaynak H, Spengler JD, Ryan PB. 1995. A population based exposure model for benzene. *Journal of Exposure Analysis and Environmental Epidemiology*. 5(3):375-403.

MacIntosh DL, Hull DA, Brightman HS, Yanagisawa Y, Ryan PB. 1994. A method for determining in use efficiency of Stage II vapor recovery systems. *Environment International*. 20(2):204-208.

MacIntosh DL, Suter II GW, Hoffman OF. 1994. Uses of probabilistic exposure models in ecological risk assessments of contaminated sites. *Risk Analysis*. 14(4):405-420.

PRESENTATIONS GIVEN AT PROFESSIONAL MEETINGS

Myatt T, Minegishi T, Allen JG, **MacIntosh DL**. Mitigation of asthma triggers in indoor air: a comparison of air cleaning options. Presented at the *American Public Health Association Annual Meeting*, San Diego, CA, October 29, 2008.

Minegishi T, Kaufman M, Allen J, **MacIntosh DL**. Assessing the impact of traffic-related air pollution associated with a proposed development in a densely populated urban area. Presented at the *American Public Health Association Annual Meeting*, San Diego, CA, October 27, 2008.

MacIntosh DL, Minegishi T, Levy JI, Myatt T. In-duct air cleaning: a modeling and health impact assessment. Presented at the *American Public Health Association Annual Meeting*, San Diego, CA, October 27, 2008.

MacIntosh DL, Stewart JH, Sabato J, Myatt T, Flowers G, Brown K, Hlinka D, Sullivan D. Determination of the population at risk of heavy metal exposure from a former smelter. Presented at the *International Society for Exposure Science / International Society for Environmental Epidemiology Joint Annual Meeting*, Pasadena, CA, October 16, 2008.

Minegishi T, Suh HH, Kaufman M, Allen J, Zamore W, Lipson S, **MacIntosh DL**. Traffic-related air pollution in a densely populated urban area. Presented at the *International Society for Exposure Science / International Society for Environmental Epidemiology Joint Annual Meeting*, Pasadena, CA, October 13, 2008.

Myatt T, Minegishi T, Kaufman M, Baker B, **MacIntosh DL**. Application of GIS to estimate public health benefits of whole house in-duct air cleaning. Presented at the *ESRI 2007 Health GIS Conference*, Tucson, AZ, October 9, 2007.

MacIntosh DL, McCarthy JF, Ludwig JF, Naeher LP, Suh HH, Spengler JD. Reductions in aerosol exposure afforded by indoor air cleaning systems. Presented at the *International Society for Exposure Science Annual Meeting*, Paris, France, September 2-6, 2006.

MacIntosh DL, McCarthy JF, Ludwig JF, Naeher LP, Suh HH, Spengler JD. Whole house air cleaning by in-duct and portable cleaners. Presented at *Healthy Buildings 2006*, Lisbon, Portugal, June 4-8, 2006.

Myatt TA, Naeher LP, **MacIntosh DL**, Suh HH. 2004. Markers of inflammation in alveolar cells exposed to fine particulate matter from Atlanta. Presented at the *American Association for Aerosol Research 2004 Conference*. Atlanta, GA. October 4-9, 2004.

MacIntosh DL, Kabiru C, and Ryan PB. 2000. Pesticide residues in duplicate diet samples from the NHEXAS-Maryland investigation. Presented at the *International Society for Exposure Analysis 2000 Conference*. Monterey, CA. October 24-27, 2000.

MacIntosh DL, Kabiru C, Ryan PB. 2000. Pesticides in duplicate diet samples from the NHEXAS-MD study. Accepted for presentation at the *Annual Conference of the International Society for Exposure Analysis*, October 24-27, 2000, Monterey, CA.

Peter C, Atilas J, **MacIntosh DL**. 2000. Residential Use of Pesticide Products Containing Chlorpyrifos, Diazinon, and Malathion. Accepted for presentation at the *Annual Conference of the International Society for Exposure Analysis*, October 24-27, 2000, Monterey, CA.

Pang Y, **MacIntosh DL**, Ryan PB. 2000. Aggregate consumption of copper, selenium, and nickel. Accepted for presentation at the *Annual Conference of the International Society for Exposure Analysis*, October 24-27, 2000, Monterey, CA.

Ryan PB and **MacIntosh DL**. 2000. Statistical analyses of the longitudinal component of exposure—results from the NHEXAS-Maryland investigation. Presented at the *International Society for Exposure Analysis 2000 Conference*. Monterey, CA. October 24-27, 2000.

Yanosky JD, Clark S, Williams PL, **MacIntosh DL**. 2000. A comparison of several personal, outdoor, and indoor PM_{2.5} sampling methods. Presented at the *International Society for Exposure Analysis 2000 Conference*. Monterey, CA. October 24-27, 2000.

Tow L, **MacIntosh DL**, Williams PL. 2000. An alternative method for assessing worker exposure to volatile organic compounds. Presented to the Georgia Chapter, American Industrial Hygiene Association. January 25, 2000, Atlanta, Georgia.

Collins MJ, **MacIntosh DL**. 1999. Air quality at manufactured gas plants. Presented at the *American Industrial Hygiene Conference & Exposition*. June 5-11, 1999. Toronto, Canada.

Logan, JE, **MacIntosh DL**. 1999. Homogeneous exposure groups in a coal-fueled power facility. Poster presented at the *American Industrial Hygiene Conference & Exposition*. June 5-11, 1999. Toronto, Canada.

Williams PL, Whittaker LS, **MacIntosh DL**. 1999. Diesel exhaust exposures in the electric utility industry. Presented at the *American Industrial Hygiene Conference & Exposition*. June 5-11, 1999. Toronto, Canada.

Kramer BK, Ryan PB, **MacIntosh DL**. 1999. Initial investigation of analytical extraction techniques for the determination of bioavailability of pesticides in soil. *Proceedings of the 1999 Conference on Hazardous Waste Research*. St Louis. Missouri, May 1999.

Ryan PB, **MacIntosh DL**, Hammerstrom KH. 1998. The NHEXAS-MD investigation: temporal variability in exposures—results and lessons learned. *Epidemiology*, 9(4) Supplement:S41.
MacIntosh DL, Spengler JD, Gutschmidt K. 1998. The role of human exposure assessment in sustainable development. Presented at the University System of Georgia Research Symposium on Sustainable Development, May 14, 1998, Atlanta, GA.

Ryan PB, **MacIntosh DL**, Burke TA, Buck RJ, Weker RA, Clickner RJ, Camann DE, Hammerstrom KA. 1997. The National Human Exposure Assessment Survey in Maryland

(NHEXAS-Maryland): Design and implementation of a study of a temporal variation in human exposure to environmental pollutants. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

MacIntosh DL, Hammerstrom KA, Ryan PB. 1997. Population and temporal variability of selected heavy metals in food. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

MacIntosh DL, Needham LL, Hammerstrom KA, Ryan PB. 1997. Pesticide residues in urine: Temporal and population variability and associations with activities and diet. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Camann DE, **MacIntosh DL**, Weker RA, Hammerstrom KA, Ryan PB. 1997. Associations among pesticide and PAH concentrations in residential environmental measurements. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

MacIntosh DL, Hammerstrom KA, Ryan PB. Population and temporal variability of selected heavy metals in drinking water. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Ryan, PB, Paschal D, **MacIntosh DL**, Hammerstrom KA. 1997. Population and temporal variability of lead and cadmium in blood. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Weker RA, Stevens RK, **MacIntosh DL**, Hammerstrom KA, Ryan PB. 1997. Comparison of XRF personal PM10 data from NHEXAS and PTEAM. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Clickner RP, Weker RA, **MacIntosh DL**, Hammerstrom KA, Ryan PB. 1997. The NHEXAS study in Maryland: a review of the implementation experience. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Scanlon KA, **MacIntosh DL**, Hammerstrom KA, Ryan PB. 1997. Population and temporal variability analyses of dietary checklist data. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Ryan PB, Melnyk L, **MacIntosh DL**, Scanlon KA, Hammerstrom KA. 1997. NHEXAS-Maryland: the association between high dietary metal concentration and the intake of certain foods. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Clickner RP, **MacIntosh DL**, Hammerstrom KA, Ryan PB. 1997. Participant responses in the NHEXAS study in Maryland. Presented at the *Annual Conference of the International Society for Exposure Analysis*. November 2-5, 1997. Research Triangle Park, NC.

Tolbert PE, Mulholland JA, **MacIntosh DL**, Xu F, Daniels D, Devine O, Carlin B, Butler A, Wilkinson J, Russell A, Nordenberg D, Frumkin H, Ryan B, Manatunga A, White M. 1997.

Spatio-temporal analyses of air quality and pediatric asthma emergency room visits. *Proceedings of the American Statistical Association Conference*, September, 1997, Anaheim, CA.

Ryan PB, **MacIntosh, DL**. 1996. Time-activity pattern considerations for chronic human exposure modeling. Presented at the *Annual Conference of the International Society for Environmental Epidemiology and the International Society for Exposure Analysis*. December 10, 1996. New Orleans, Louisiana.

MacIntosh DL, Spengler JD, Ozkaynak H, Ryan PB. Dietary exposures to selected metals and pesticides. Presented at the *Second Conference of the Pan-African Environmental Mutagen Society*, January 25, 1996, Cape Town, South Africa.

Ryan PB, Burke TA, Hammerstrom K, Buck RJ, Botteron C, **MacIntosh DL**. 1995. Phase I field investigations for the National Human Exposure Assessment Survey (NHEXAS): the relationship between short-term exposure measurements and long-term exposures. Presented at the *Annual Conference of the International Society for Environmental Epidemiology and the International Society for Exposure Analysis*. September 1, 1995. Noordwijkerhout, The Netherlands.

MacIntosh DL, Özkaynak H, Xue J. 1994. Uses of probabilistic exposure and dose models in environmental health management and risk assessments. *Presented at the Annual Meeting of the Society for Risk Analysis*. December 7, 1994.

MacIntosh DL, Özkaynak H, Xue J. 1994. Evaluating the efficacy of source control strategies for managing public health risks of benzene. Presented at the *Annual Meeting of the Society for Risk Analysis*. December 5, 1994. Baltimore, MD.

Özkaynak H, **MacIntosh DL**, Ryan PB. 1994. Development of probabilistic, multi-media, population-based exposure models. Presented at the *Annual Conference of the International Society for Environmental Epidemiology and the International Society for Exposure Analysis*, September 5, 1994. RTP, NC.

MacIntosh DL, Özkaynak H, Spengler JD, Fingleton, D. 1993. Designing an atmospheric radioactivity monitoring network near the Waste Isolation Pilot Plant. *Proceedings Topical Meeting on Environmental Transport and Dosimetry*, American Nuclear Society. September 1-3, 1993. Charleston, SC.

INVITED PRESENTATIONS

MacIntosh DL. 2009. Identify population groups and environments exposed to engineered nanoscale materials. Presented at *National Nanotechnology Initiative Human and Environmental Exposure Workshop*, February 24-25, 2009. Bethesda, Maryland.

MacIntosh DL, McCarthy JF. 2004. Asthma and schools: Issues and approaches. Presented to the National Institute of Occupational Safety and Health, Division of Respiratory Disease Studies, March 11, 2004. Morgantown, West Virginia.

MacIntosh DL. 2003. Data needs for assessment of longitudinal dietary exposure. To be presented at the *National Meeting of the Society for Risk Analysis*, December 7-10, 2003. Baltimore, Maryland.

MacIntosh DL. 2002. Epidemiology for toxic tort cases: A primer on the science and medical issues. *Mealey's Toxic Tort Litigation 101 Conference*. November 18, 2002. Boston, Massachusetts.

MacIntosh DL, Logan JE, Williams PL. 2000. Arsenic in the coal-fired power industry. Presented to the *National Meeting of the Edison Electric Institute Occupational Safety and Health Committee Conference*, April 30-May 3, 2000. Savannah, Georgia.

MacIntosh DL. 2000. Statistics for the industrial hygienist. Presented to the Georgia Chapter, American Industrial Hygiene Association. April 10, 2000. Marietta, Georgia.

MacIntosh DL. 2000. Aggregate exposure to multi-media chemicals for residents in the vicinity of hazardous waste sites. Presented at the seminar *Poisons in our midst: recognition of environmentally related diseases*. February 5, 2000. Augusta, Georgia.

MacIntosh DL. 1999. Arsenic and the National Human Exposure Assessment Survey. Presented at *The Role of Human Exposure Assessment in the Prevention of Environmental Disease*, organized by the National Institute of Environmental Health Science, National Institutes of Health. September 23, 1999. Rockville, Maryland.

MacIntosh DL. 1999. Databases for assessment of aggregate and cumulative exposure to FIFRA regulated pesticides. Presented to the *Science Advisory Panel, USEPA Office of Pesticide Programs*. September 22, 1999. Crystal City, Virginia.

Visiting Researcher. 1998. World Health Organization, International Programme for Chemical Safety. June-July, 1998. Geneva, Switzerland.

Williams PL, **MacIntosh DL.** 1998. Preliminary fine particle concentrations in Athens and implications for compliance with the new federal ambient air quality standards. Presented to the *Consortium of Associated Carpet and Textile Industries*. February 16, 1998. Athens, Georgia.

MacIntosh DL, Williams PL. 1998. Preliminary assessment of fine particle concentrations in Northeast Georgia. Presented to the Georgia Chapter, American Industrial Hygiene Association. January 23, 1998. Atlanta, Georgia.

MacIntosh DL. 1997. Methods and Current Limitations for Chronic Dietary Exposure Assessment. Presented at the *Information Sharing Workshop on Aggregate Exposure*

Assessment, Sponsored by the International Life Sciences Institute, June 5, 1997. Washington, DC.

Tolbert PE, **MacIntosh DL**, Xu F, Mulholland J, Devine O, Ryan PB, Frumkin H, Nordenberg. 1996. Air quality and emergency room visits for asthma. Presented at the *NISS/USEPA Workshop on Statistical Issues in Setting Air Quality Standards*. September 18, 1996. Research Triangle Park, North Carolina.

MacIntosh DL, Ryan PB. 1996. Study designs for acute and chronic exposure assessment. Presented at the *National Institute of Health Sciences Symposium on Exposure Assessment*. July 19, 1996. Tokyo, Japan.

MacIntosh DL, Ryan PB. 1996. Rationale for evaluation of chronic exposure to environmental contaminants. Presented to the *National Clean Air Association*, January 30, 1996. Pretoria, South Africa.