

Dr Muriel Lepesteur-Thompson

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Personal Details

Australian citizen born in France (dual citizenship)
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Dr Muriel Lepesteur-Thompson is a scientist with more than 15 years experience in research and consultancy, including more than 7 years of research leadership and management.

Areas of expertise include environmental monitoring, biogeochemistry, flow cytometry, catchment management issues such as public health, risk assessment, pathogen detection, water and waste water treatment, water recreational activities and impact of land uses.

She has authored more than 20 books, book chapters, refereed articles, technical reports and guidelines for government bodies. She managed the Group for Environmental Research in Microbiology (GERM) laboratory for 7 years and was the inventor and developer of the Low Impact Biocide (LIB) technology.

She generated more than 0.5 million dollars in research income for Murdoch University in the period 2004-2006. As the LIB technology is about to reach the commercialisation stage, she is only needed as an advisor.

WORK HISTORY**06 - Private consultant/Free-lance Translator**

Scientific advisor for Byocides Pty Ltd (under Management by StoneRidge Ventures and Westchem Ventures)

Development of a R&D programme for commercialisation of Low impact Biocides.

Technical support and expert advice for liaison with potential partners

Development of COMET proposal

Patent writing in collaboration with Lord & associates

Private Consultant for Murdoch University/Sarawak Government

Audit of water supply facilities and management in Sarawak for guidelines and policy development

Environmental and health education programmes, pathogen monitoring and research for guidelines and policy development.

Free-Lance Translator French to English and English to French (translation, proofreading, copywriting, reviewing, localisation, marketing)

Large Contracts for military and aircraft equipment

Terms and Conditions for eCommerce, military subcontractors, tourism, etc.

Product specifications for mining industry and various industrial equipment

Technical translations for the water and wastewater industry (specifications & commissioning of WTP and WWTP)

Industrial risk assessments

PR and H&S documents

Financial reports

Press releases

Tourism Websites (booking services, car rental, terms and conditions, hotel descriptions, etc.)

Design for new marketing concept

Clients include: Lexxicorp, Translation international, Woodside, BHPartners, Terex, StrawberryWorld, eBridge, TTI Network, Budrich Translation, Veiola, RCT translations, KBR, etc.,

99-06 Research Fellow to Senior Research Fellow (School of Environ. Science, Murdoch University)

Leadership/Project Management in Research and Consulting Activities (see Table1)

Management of the Group for Environmental Research in Microbiology (GERM) laboratory: Activity of the laboratory include research in microbial risk assessment and management, consultancy, training and provision of services such as microbial analysis in waters, wastewaters, biosolids, compost and soils (Clients

include: Water Corporation, Western Mining Corporation, Dale Engineering, Keep Australia beautiful Council, Solar Dwellings). Supervision of up to 14 staff members

Supervision of PhD, Masters, Honours and 4th year students

Review of scientific and technical conference papers

- IWA World Water Congress and Exhibition Marrakech 2004, Palais of Congress, Marrakech, 19-24 September 2004.
- 1st International Conference on Onsite Wastewater Treatment & Recycling, Fremantle WA 11-13 Feb 2004 for possible publication in the journal of Water Science and Technology Series of IWA publications
- Ecological Sanitation - Sustainable Sanitation, 2nd International Symposium on Ecological Sanitation of GTZ including the 1st IWA Conference 'Sustainable Sanitation', Lübeck, Baltic Sea (near Hamburg) April 7 to 11, 2003.
- Sustainability of Water Resources Conference, UNEP-IETC, Murdoch University, Perth, 13-14 November 2002 for possible publication in the journal of Water Science and Technology or Water and Environmental Management Series of IWA publications

Reviewer for International Journals (Water Res, Science Asia, Lett Appl Microbiol, J Appl microbiol)

Translation services French to English and English to French (occasional)

01-03 Project Officer Industry Liaison (Centre for Organic Waste Management, Murdoch University)

This part-time position involved mainly the initiation and coordination of projects (research, consultancy & tenders) on waste (including controlled waste) and wastewater management. I also performed:

- Administration related with Board of Management, Advisory and Programme Committees.
- Liaison with local councils and industries.
- Creation and maintenance of web pages for the COWM Website and the ORBIT 2003 conference.
- Lecture in "Health risk and waste management" for the professional course in Waste management.

99 Consultant (Water Engineering Department, School of Civil Engineering, UNSW, Kensington)

Chief Investigator "Efficiency of the Schmutzdecke layer (biofilm) in a sand bed filtration system for water reclamation" (ARC).

97-98 Research Associate (Water Engineering Department, School of Civil Engineering, UNSW)

- Team Leader: "Particle dispersion for further *Cryptosporidium* and *Giardia* detection by Flow Cytometry" (Macquarie Research Ltd).
- Preparation and coordination of the CRCWQT project "Pathogens in Catchments". Coordination of sampling strategy at a national level.

98 Consultant (School of Environmental Sciences, Murdoch University)

Set up of a FacsCalibur for further detection and sorting *Giardia* and *Cryptosporidium* in biosolids, training of a Masters student on the flow cytometry technique and on bacteriophage analysis methods

97 Technical assistance and Training (IETU, Katowice, Poland) of a scientific team on microbiological techniques for bioremediation of coal contaminated soils.

96-97 Research Associate (Institute of Marine Biogeochemistry, Montrouge, France)

Technical assistance and training of a Post-doctoral student on the flow cytometry technique, Major overhaul of an ACR 1000 ("semi-automatic" flow cytometer) after a long period idle.

96 Free-Lance translation services English to French for a Chinese software company based in Switzerland (technical and commercial)

94-96 Research Associate (Postdoctoral Fellowship, EAWAG, Zurich, Switzerland)

"Significance of bacterial adhesion in the heterotrophic capacity of an eutrophic lake. Example of the Lugano Lake". This project was funded by the European Community (Human and Capital Mobility fellowship awarded based on merit).

90-94 Ph.D. Scholar (IBM, ENS France/Paris 6, Paris, France).

"Influence of small particles and of physicochemical parameters on the distribution of bacteria and their activity in estuarine and coastal environments". (French Ministry of Research and Technology scholarship Award). Included 5 scientific campaigns at sea (French, Italian and Croatian coasts).

91-92 Consultant for UNESCO (Venice, Italy)

Characterisation of the particles and the biological activity in the Venice Lagoon, Italy by flow cytometry. "International Research Project on the Venetian Lagoon Ecosystem".

90 Research Assistant (IBM/ENS France/Paris 6, Paris, France).

"Research of a phytoplanktonic sample preservation method for further analysis by flow cytometry".

89 Research Assistant (Laboratory of Marine Bacteriology, Biological Station, Roscoff, France).

“Production of exopolysaccharides by anaerobic bacteria and archae from deep hydrothermal vents”.

“Accumulation of faecal contaminant in oysters in the Bay of Morlaix, France”

EDUCATION

- 96** Ph.D. Oceanology, Meteorology and Environment, Major Biogeochemistry, Paris 6/Ecole Normale Supérieure, Paris
- 90** DEA in Oceanology, Meteorology and Environment, Major Physicochemistry, Paris 6/Ecole Normale Supérieure, Paris
- 89** Masters in Biology of Organisms and Populations, University Pierre & Marie Curie (Paris 6)
- 86** BSc. Degree in Environmental Sciences, Major Applied Biology and Genetics, University Paris 7

OTHER TRAINING

- Translation Workshop organised by NAATI, (2006)
- Management Training course, MWEF (2005)
- Good Laboratory Practice Seminar, AusBiotech (2003).
- 4WD driving course (2002)
- Professional Course on Solid Waste Management, COWM, Murdoch University (2001)
- Tools for decision-making in Waste Management workshop (multicriteria analysis), COWM, Murdoch University (2001)
- Defensive driving course (2001)
- Dreamwaver Course (2001)
- Senior First Aid Certificate (2000)

PROFESSIONAL MEMBERSHIPS and ACTIVITIES

- Secretary and Liaison Officer for WA FEAST FRANCE (association for science & technology exchange between France and Australia)
- Member of the Curriculum Council Recreational and Environmental Studies Reference Group
- Reviewer for Lett Appl Microbiol, Water Res, Science Asia and J Appl Microbiol
- Member of the Society for Applied Microbiology
- Consultant for the DoE (Waste Management consultancy services)

LANGUAGE AND COMPUTER SKILLS

French: native speaker English: Bilingual German: Basic working knowledge
Use of PC and Macintosh, Spreadsheets, Word and graphic processors. Wordfast. Data processing. Internet.
Creation and maintenance of Web pages (Dreamwaver, FrontPage). Statistical analysis (AcaStat)

TEACHING, SUPERVISION AND TECHNOLOGY TRANSFER

- 04** Training of Senior and Middle Management Representatives of the Sarawak (Malaysia) State Government on strategies for catchment Management.
Training of river patrol officers from NREB (government agency, Sarawak state) on water sampling techniques for investigation and enforcement purposes.
- 02-04** Supervision of 4 students for the Research Student Scheme (Scitech/CSIRO)
- 00-06** Lecture in Health risk and waste management for the professional course in Waste management, 2002.
Lectures at undergraduate level (Oceanography, Pollution and its control and environmental sciences)
- 99-06** Supervision of research students (under- and postgraduate level)
- PhDs:** Detection of viable *Giardia* in biosolids and composts by molecular techniques (FISH and PCR)
Enhancing anaerobic degradation of lipids in wastewater by addition of substrates
- MSc:** Modeling microbial risk in Sarawak water catchments. Implication for tropical areas
Identification of management options for infectious pathogens in Sarawak water catchment
Catchment Management of Gravity Feed Systems (GFS) for Rural Water Supply Schemes in Sarawak
Estimation of burden of disease and management of rural water supply systems in Sarawak
- Hons:** Benchmarking criteria for risk assessment in WA catchments

- Biosolids sample treatment for detection of *Giardia* by flow cytometry
- 4th yr: Impact of vegetation on water quality in SCP Wetlands
Towards Waterway management: effect of low impact biocides on HAB
Health risk and water quality impact assessment of recreational activities in the Peel Harvey estuary

COMMUNITY SERVICE

- 03-06 Supervision of a lab assistant for the “Return to Work” Program in liaison with a rehabilitation consultant (CRS Australia)
- 03 Organisation of a Microbiology session in a PrePrimary Class (4-5 years): “Our germs and why we should wash our hands”. Blue Gum Montessori School.
- 02-04 Participation in the Student Research Scheme organised by SciTech/CSIRO involving training and supervision of 4 Year-12 students on scientific projects.
- 01-05 Secretary of the Group for French-Australian Cooperation in Science and Technology (WA branch).
- 01 Provision of training and analysis for Keep Australia Beautiful Council.
Display for Science Week (Forrest place, CBD, Perth).

REFEREES

Dr Susan Moore, Environmental Science, Murdoch University, (08) 9360 6484. s.moore@murdoch.edu.au

Emeritus Professor Arthur McComb, Environmental Science, Murdoch University, (08) 9360 2538
a.mccomb@murdoch.edu.au

PUBLICATIONS

Books & Book Chapters

M. Lepesteur-Thompson (2006). Development of management guidelines for water supply catchment areas of sarawak. Report for Residual Task#3: Pathogen monitoring for water supply catchment. School Of Environmental Science Report, Murdoch University, Perth, Australia

M. Lepesteur-Thompson (2006). Development of management guidelines for water supply catchment areas of sarawak. Report For Residual Task#4: Community education to improve public health and water quality management. School Of Environmental Science Report, Murdoch University, Perth, Australia

Hadwen, W.L., A. H. Arthington, P. I. Boon, **M. Lepesteur** and A.J. McComb, (2006). Rivers, streams, lakes and estuaries: hot spot for cool recreation and tourism in Australia. Technical Report. CRC for Sustainable Tourism Publishing.

J. Doust, D. Katscherian, E. Kow, **M. Lepesteur**, and Arthur J. McComb (2004). Is there scope for waste minimisation by small businesses? Environ. Science Report 04/2 Murdoch University. ISBN 86905/915/7

Lepesteur M. and J-M. Martin, (2000). Characterisation of particles and biological activity in the Venice lagoon by flow cytometry, p. 59. In (P. Lasserre and A. Marzollo, eds) The Venice Lagoon ecosystem, inputs and interactions between land and sea. Paris, UNESCO; New York, Parthenon Publishing Ltd.

Lepesteur M. and Martin J.-M. (1996). Influence des particules fines et des paramètres physicochimiques sur la distribution des bactéries et leur activité en milieux estuariens et cotiers (Influence of fine-grained particles and physicochemical parameters on the distribution of bacteria and their activity in estuarine and coastal environments). Travaux Universitaires 1996, [Note(s) : , 218] No : 96 PA06 6249), INIST-CNRS, Cote INIST : T 111634

Refereed papers

Lepesteur, M., A. Wegner, A. McComb, and S. Moore. Importance of public information and perception for managing recreational activities in the Peel Harvey estuary, Western Australia. Accepted by *J Environ Manage*

Lepesteur, M., A. McComb and S. Moore (2006). Do we all face the same risk when bathing in the estuary? *Water Res* 40(14): 2787-2795

Liew K.B., & **M. Lepesteur** (2006). Performance of the rural health improvement scheme in reducing the incidence of waterborne diseases in rural Sarawak, Malaysia. *Trans Royal Soc Trop Med Hyg.* 100:949-955.

Kuang, Y., P. Pullammanappallil,

M. Lepesteur and G.E. Ho (2006). Recovery of oleate-inhibited anaerobic digestion by addition of simple substrates. *J Chem Technol Biotech*, 81 (6):1057-1063.

Lepesteur M., S. Blasdall and N.J. Ashbolt (2003). Particle dispersion for further *Cryptosporidium* and

Giardia analysis by flow cytometry. *Lett Appl Microbiol* 37(3):218-229.

Kuang Y., **M. Lepesteur**, P. Pullammanapallil & G. E. Ho (2002). Influence of co-substrates on structure of microbial aggregates in LCFA-fed anaerobic digesters. *Letters in Applied Microbiology*, 35:1-5.

Lepesteur, M. and Martin, J. M., (2000). Characterization of particles and biological activity in the Venice lagoon by flow cytometry. *Man and the Biosphere Series*. 25:59-72

Lepesteur M., Martin J. M., (2000). Characterization of particles and biological activity in the Venice Lagoon by flow cytometry, in Istituto Veneto di Scienze, Lettere ed Arti, La ricerca scientifica per Venezia. Il Progetto Sistema Lagunare Veneziano, III, Summaries of the Results of the UNESCO/MURST Project, Venezia 2000, pp. 25-28; anche in The Venice Lagoon ecosystem: inputs and interactions between land and sea, edited by P. Lasserre and A. Marzollo, UNESCO and Parthenon Publishing Group, Paris-New York 2000.

Lepesteur M., J-M. Martin, and A. Fleury, (1993). A comparative study of different preservation methods for phytoplankton cells analysis by flow cytometry. *Mar Ecol Prog Ser* 93(1/2):55-63.

Conference papers

M. Lepesteur and R. Kristiana, (2006). Can a Quantitative Risk Assessment Model (QRAM) be applied to water catchments in tropical regions? Oral and Poster Presentation, 2nd FEMS Congress of European Microbiologists, 4-8 July 2006, Madrid, Spain.

R. Kristiana, **M. Lepesteur**, and Ho G.E., (2005). Microbial risk assessment in water catchment: literature review towards designing a benchmarking system. 1st IWA-ASPIRE (Asia Pacific Regional Group) Conference & Exhibition. Singapore 10-15 July 2005.

M. Lepesteur, (2004). Sulfur as Source of Energy, Old and New World? Implications in Today's Biotechnology. "Iron and sulfur bacteria workshop", 11-14 February 2004, Murdoch University, Perth Australia.

M. Lepesteur, A. McComb, G.E. Ho and S. Moore, (2003). Faecal waste and natural environment: water quality and epidemiological implications. "ORBIT 2003. Biological Processing of Organics: Advances for a Sustainable Society" IVth International Conference of the ORBIT Association, 30 April-2 May 2003, Perth, Australia.

Mullins D., **M. Lepesteur**, S. Toze, and G.E. Ho (2003). DNA for biosolids management: a new era? "ORBIT 2003. Biological Processing of Organics: Advances for a Sustainable Society" IVth International Conference of the ORBIT Association, 30 April-2 May 2003, Perth, Australia.

Kuang Y., **M. Lepesteur** & G. E. Ho (2001). Identification and quantification of the anaerobic bacterial subpopulation with oligonucleotide probe hybridization under the inhibition of long chain fatty acid. In "Anaerobic Digestion 2001 World Congress" Proceedings, Antwerpen sept 2-5, 2001.

M. Lepesteur, D. Pond, A. Wegner, A. McComb, G.E. Ho and S. Moore (2002). Health risk and environmental impact assessment of recreational activities in the Peel Harvey estuary. "Tropical Temperate Transition", Australian Marine Science Association Conference, Fremantle July 10-12, 2002.

Lepesteur M., (1997). Influence of small particles and physicochemical parameters on the distribution of the bacteria and their activity in the estuarine and coastal environments. Institute for Ecology of Industrial Areas (IETU), Katowice, Poland, May 12th, 1997.

Lepesteur M., and Harms H., (1995). Bioavailability of dissolved, colloid-bound, and particle-bound phosphate. Poster and presentation held at the symposium "Colloids in aquatic environments, their properties, transport, and importance as carriers". October 19-20, 1995. Swiss Academy of Sciences and Priority Program Environment. Geneva, Switzerland.

Seminars

M. Lepesteur (2003). Adults only? (or a tentative health risk assessment of recreational activities in the Peel Harvey estuary). Environmental Science Seminar, Murdoch University, 23 April 2003.

Others

M. Lepesteur, 2003. Draft of the Australian NHMRC guidelines for managing risk in recreational waters, 2004. (tender awarded by Dept Health and Ageing) Principal contributor for 6 chapters: "Sun", "Heat and cold", "Beach safety, accidents and physical hazards", "Dangerous aquatic organisms", "Physical and chemical agents" and "Well being and aesthetic aspects"; Contributor for "Monitoring and assessment" and "Management options for healthy recreational water use"

M. Lepesteur (2003). Marine Pathogens. OzEstuaries-Coastal Indicator Development and Information System available at: HYPERLINK "http://www.ozestuaries.org/indicators/in_pathogen_organisms_f.html"

http://www.ozestuaries.org/indicators/in_pathogen_organisms_f.html

M. Lepesteur (2003). Better public information needed on popular WA estuaries. HYPERLINK "mailto:Info@crctourism" Info@crctourism, CRC for Sustainable Tourism, July 2003//Volume2 Issue 7.

McGrath D., Toze S., **Lepesteur M.**, and Ho, G.E. (2001). Detection of Viable Giardia in wastewater sludges and biosolid products. Final Report for the Water Corporation/SPIRT project (confidential).

Lepesteur M., S. Blasdall and N.J. Ashbolt (1999). Particle dispersion for further *Cryptosporidium* and *Giardia* analysis by flow cytometry. Final Report to Macquarie Research Ltd (Confidential)

Lepesteur M. and N.J. Ashbolt (1999). Influence of physico-chemical parameters on particle removal by the Schmutzdecke layer in slow sand bed filtration systems. UNSW report (confidential).

Lepesteur M. and J-M. Martin, (1993). Characterisation of particles by flow cytometry in the Venice lagoon. Workshop of the scientific Committee, Venice, January 27-30, 1993, UNESCO, International Research project on the Venetian Lagoon.

Cauwet G., **Lepesteur M.**, and J-M. Martin, (1993). Determination of the bacterial activity and the bacterial free-living and particle-bound fractions in a stratified estuarine system. Final Report CEE contract French-Yugoslavian Program.

On-going preparation of papers for publication

M. Lepesteur, A. McComb and S. Moore. Implications of population demographics for sustainable development and management of the recreational activities in the Peel Harvey estuary. In preparation for Austral J Environ Manage

M. Lepesteur, and A. McComb. Can we develop a water catchment strategy based on risk assessment in a tropical region. For submission to Water Pollut Bull

M. Lepesteur & K.B. Liew. An attempt to find an appropriate indicator of faecal contamination in tropical catchments. For submission to J Appl Microbiol

M. Lepesteur. A new attempt to measure bacterial respiratory activity by flow cytometry. In preparation for Lett Appl Microbiol