

Benjamin Patrick de Jourdan

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CONTACT INFORMATION

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BIOGRAPHY

Benjamin de Jourdan is an environmental toxicologist currently located in Guelph, Ontario, Canada. Dr. de Jourdan specializes in the prediction and determination of the environmental fate and transport and risk assessment of man-made chemicals. He received his doctorate from the University of Guelph, where he studied the environmental fate and toxicity of emerging contaminants. He has experience in the completion of risk assessments, coordination of toxicology studies, and multi-media exposure and transport modeling. Dr. de Jourdan can provide advice on environmental toxicology, regulatory, and environmental policy issues, and support for human health and environmental risk assessments through data evaluation, analysis, and peer review.

WORK EXPERIENCE

Contract Researcher, Environment Canada: January 2014 - April 2014

Duties include writing report on the accumulation of novel halogenated organic compounds in Great Lakes water and biota, utilizing stable isotope and contaminant data collected over several years.

Achievements: Preparation of manuscript, and support for Environment Canada's Chemicals Management Plan

Toxicologist, NovaTox: September 2013 - December 2013

Responsibilities include the preparation of toxicological summaries, environmental impact statements, and assisting in proposal development and application. Providing support for the technical aspects associated with risk assessments, including chemical data screening of soil, groundwater, sediment, and surface water, development of toxicity reference values, exposure and risk characterization and calculation, and report writing.

Achievements: Completion of risk assessments in support of record of site condition for large industrial and mixed commercial/residential properties

Researcher, University of Guelph: May 2013 - September 2013

Duties include the setup, execution, management, and analysis of two mesocosm studies dealing with environmental fate and effects of industrial chemicals on aquatic macrophytes and zooplankton.

Achievements: Development of new mesocosm treatment and sampling techniques, support for a PhD thesis.

Field Assistant, NovaTox: May 2013 - July 2013

Providing support for environmental impact statement, through amphibian, breeding bird, vegetation surveys, and ecological land classification mapping

Achievements: Completion of an environmental impact study for a vacant property

Contract Researcher, Environment Canada: September 2012 - March 2013

Duties include writing reports and papers dealing with the environmental fate and occurrence of brominated flame retardants.

Achievements: Preparation of manuscript and presentations at international conference

Research Technician, University of Guelph: May 2007 - September 2007

Duties include collaborating and assisting with the design, setup, and execution of a mesocosm study.

Achievements: Maintaining various freshwater cultures (e.g., *Lemna*, *Daphnia*), support for an MSc thesis.

EDUCATION

2012 PhD, Environmental Biology (Toxicology)
“Mesocosm Evaluation of the Fate and Effects of Three Brominated Flame Retardants”
University of Guelph, Guelph, Ontario, Canada
Co-Advisors: Solomon, Keith R., Muir, Derek C.G.
Committee: Hanson, Mark L., Sibley, Paul K.
Date of defense: August 2012

This thesis was an Environment Canada funded collaboration which investigated the environmental fate, bioavailability, and toxicological effects of select novel brominated flame retardants. A suite of *in silico* techniques were used to estimate these parameters, which were then compared to results from an outdoor mesocosm study. Biochemical and ecological endpoints were assessed in fathead minnows and macroinvertebrates. The project involved development of extraction and analytical techniques for the detection of these novel compounds in abiotic and biotic matrices, utilizing automated solvent extraction, gel permeation chromatography, and gas and liquid chromatography coupled with mass spectrometry.

2007 BSc (Honours) in Environmental Toxicology
University of Guelph, Guelph, Ontario, Canada

Relevant courses include: Planning Industrial Ecology, Environmental Policy Formation & Administration, Biology of Polluted Waters, Pesticides in the Environment, Analytical Chemistry, Analytical Toxicology, Ecotoxicological Risk Characterization, Environmental Risk Assessment, Experimental Comparative Animal Physiology, and Topics in Toxicology.

TEACHING EXPERIENCE

2008 - 2011 *Teaching Assistant*, University of Guelph

Courses supervised include TOX*4200 Topics in Toxicology (S2009) and ENVB*3030 Pesticides and the Environment (F2009, W2010 DE, W2011). Responsible for grading assignments, exams, and providing guidance for designing research proposals, covering a wide variety of human health and environmental topics. Administered course materials and interacted with students through online course management system.

2009 *Supervisor*, Undergraduate Research Project, University of Guelph

Instructed student on experimental design, laboratory culturing methods for *Chironomus dilutus*, and data analysis.

TRAINING AND CONTINUING EDUCATION

Course: Advances in Management and Remediation of Contaminated Sediments, June 20th, 2013. Hamilton, Ontario, Canada.

Description: This short course covered a variety of advancements in the management and remediation of contaminated sediments and involved training with sediment cap models.

Course: 4th Multidimensional Chromatography Workshop, January 8-9, 2013. Toronto, Ontario, Canada.

Description: This workshop focuses on technology and application of this very selective, and emerging chromatographic technique.

Course: Mass Balance Models for Assessing Chemical Fate and Exposure, June 21st, 2012. Peterborough, Ontario, Canada.

Description: This short course introduces some of the basic principles underlying multimedia mass balance models for chemical fate and exposure, including “Mackay box model” and fugacity concepts, and provides some “hands-on” experience using selected models (*i.e.* the Equilibrium Criterion (EQC) and Risk Assessment Identification And Ranking (RAIDAR) models).

Course: Mitacs Step: Managing Projects Course, March 1st, 2012. Guelph, Ontario, Canada.

Description: Focuses on developing sound project management skills and processes, to more realistically budget for and resourced projects, while managing and mitigating risks.

Course: Introduction to R, February 15th, 2012. Guelph, Ontario, Canada.

Description: This workshop module provides an elementary-level introduction into the R environment. Topics covered included; command syntax, basic functions, data import/export, graphical display, usage of R packages/libraries, and using R for basic data analysis operations.

Course: Fish Workshop, April 3rd 2008. Alma, Ontario, Canada

Description: This workshop provides information about fish as a research model, including: basic tank care, common health concerns, handling practices, facility design and maintenance of laboratory fish, and institutional policies and procedures.

Course: Care and Use of Animals in Research and Training, February 28th, 2008. Guelph, Ontario, Canada.

Description: This course is delivered in modules covering; i) Legislation, Regulations and Guidelines, ii) Ethics in Animal Experimentation, iii) The Three R's of Humane Animal Experimentation, iv) Research Issues, and v) Occupation Health and Safety when Working with Animals.

Course: Radiation Safety Training Course, October 29-31st, 2007. Guelph, Ontario, Canada.

Description: Introduces users of nuclear substances and radiation devices to those health physics concepts and safety guidelines needed to understand good safety practice in the lab.

Course: Introduction to the Principles of Good Laboratory Practice (GLP), May 2007. Guelph, Ontario, Canada

Description: Provides an introduction to the fundamental concepts, definitions, regulations, Acts and requirements for GLP, focusing on the OECD principles of GLP.

SCHOLARSHIPS AND AWARDS

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| 2011 | Invited student participant at ILSI Health and Environmental Sciences Institute Workshop: Moving bioaccumulation assessments to the next level: progress made and challenges ahead. Alexandria, VA, USA |
| 2010 | F.W. Karasek Best Student Poster Award, presented at EnviroAnalysis University of Guelph, PhD. Student |
| 2008 | F.W. Karasek Best Student Poster Award, presented at EnviroAnalysis University of Guelph, MSc. Student |
| 2006 | NSERC-USRA Industry, held at Guelph Chemical Laboratories University of Guelph, Undergraduate |

SELECT PUBLICATIONS

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Uptake and Biotransformation of Novel Brominated Flame Retardants by *Pimephales promelas* (fathead minnow). *Environmental Toxicology and Chemistry* 33(5): 1148-55.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. 2013. Environmental Fate of Three Novel Brominated Flame Retardants in Aquatic Mesocosms. *Environmental Toxicology and Chemistry* 32(5): 1060-8.

de Jourdan B, Oakes K, Hanson ML, Sibley PK, Servos M, Muir DCG, Solomon KR. 2012. Physiological Effects of 3 Non-PBDE Brominated Flame Retardants on *Pimephales promelas* (Fathead minnow) Exposed in Outdoor Mesocosms. *Interdisciplinary Studies on Environmental Chemistry – Environmental Pollution and Ecotoxicology*. Eds., M. Kawaguchi, K. Misaki, H. Sato, T. Yokokawa, T. Itai, T. M. Nguyen, J. Ono and S. Tanabe, pp. 55-66.

SELECT PRESENTATIONS

de Jourdan B, Muir DCG. Modeling the Environmental Fate and Bioaccumulation Potential of Selected Halogenated Organic Flame Retardants. SETAC North America 34th Annual Meeting. November 16-21, 2013. Nashville, Tennessee, USA.

de Jourdan B, Muir DCG, Teixeira C, Sett A, Embers H, Wang X, Keir M, Backus S. Bioaccumulation of Selected Halogenated Organic Flame Retardants in Great Lakes Region. SETAC North America 34th Annual Meeting. November 16-21, 2013. Nashville, Tennessee, USA.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. The bioaccumulation, environmental persistence, and degradation of several novel brominated flame retardants in aquatic mesocosms. SETAC Europe 23rd Annual Meeting. May 12-16, 2013. Glasgow, Scotland.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Environmental Toxicity and Fate of BZ-54 in Aquatic Mesocosms. Sixth International Symposium on Flame Retardants. April 7-10, 2013. San Francisco, California, USA.

de Jourdan B, Muir DCG. In Silico Approaches to Modeling the Environmental Fate, Bioaccumulation Potential, and Toxicity of Novel Brominated Flame Retardants. Sixth International Symposium on Flame Retardants. April 7-10, 2013. San Francisco, California, USA.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Assessing the Fate and Toxicity of Non-PBDE Flame Retardants Using Outdoor Mesocosms. 6th Global COE International Symposium: International Symposium on Advanced Studies by Young Scientists on Environmental Pollution and Ecotoxicology. August 4-6, 2011. Matsuyama, Ehime, Japan. Invited Presentation.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Fate, Bioaccumulation Potential and Toxicity of Three Non-PBDE Brominated Flame Retardants. ILSI Health and Environmental Sciences Institute Workshop: Moving bioaccumulation assessments

to the next level: progress made and challenges ahead. February 8-10, 2011. Alexandria, Virginia, USA.

- de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Non-PBDE Flame Retardant Degradation and Uptake in Aquatic Mesocosms. SETAC North America 31st Annual Meeting. November 7-11, 2010. Portland, Oregon, USA.
- de Jourdan B, Bartlett A, White M, Hanson ML, Muir DCG, Solomon KRS. Response of Macroinvertebrates to Brominated Flame Retardants Under Mesocosm Conditions. Laurentian SETAC Annual General Meeting. June 4th, 2010. Niagara-on-the-Lake, Ontario, Canada.
- de Jourdan B. Environmental Toxicology Or: How I Learned to Stop Worrying and Love Mesocosms. EnviroAnalysis: 8th Biennial Conference on Monitoring and Measurement of the Environment. May 10-12, 2010. Toronto, Ontario, Canada.
- de Jourdan B, Small J, Hanson ML, Muir DCG, Solomon KR. High Performance Liquid Chromatography Mass Spectrometric Method for Determination of the Flame Retardant Tetrabromobisphenol A bis(2,3-dibromopropyl ether). EnviroAnalysis: 8th Biennial Conference on Monitoring and Measurement of the Environment. May 10-12, 2010. Toronto, Ontario, Canada.
- de Jourdan B, Oakes K, Hanson ML, Muir DCG, Solomon KR. The Use of Aquatic Mesocosms to Assess the Environmental Fate of Three non-PBDE BFRs and the Effects on Fathead Minnows (*Pimephales promelas*). SETAC North American 30th Annual Meeting. November 19-23, 2009. New Orleans, Louisiana, USA.
- de Jourdan B. Déjà vu all over again: An examination of the fate and effects of past, present and future flame retardants. Laurentian SETAC Annual General Meeting. June 19, 2009. Ottawa, Ontario, Canada.
- de Jourdan B, Small J, Hanson ML, Muir DCG, Solomon KR. Development of a Novel Method for Detection of Tetrabromobisphenol A bis(2,3-dibromopropyl ether) in Environmental and Biota Samples. 11th Annual Workshop on Brominated Flame Retardants. May 19-20, 2009. Ottawa, Ontario, Canada.
- de Jourdan B, Muir DCG, Hanson ML, Oakes K, Solomon KR. Mesocosm Evaluation of the Toxicity and Fate of Three Potential PBDE Replacement Brominated Flame Retardants. SETAC North America 29th Annual Meeting. November 16-20, 2008. Tampa, Florida, USA.
- de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Microcosm Evaluation of the Environmental Fate of Two Potential PBDE Replacements. EnviroAnalysis: 7th Biennial Conference on Monitoring and Measurement of the Environment. June 23-25, 2008. Toronto, Ontario, Canada.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Microcosm Evaluation of the Environmental Fate of Two Potential PBDE Replacements. 10th Annual Workshop on Brominated Flame Retardants. June 3-4, 2008. Victoria, British Columbia, Canada.

de Jourdan B, Hanson ML, Muir DCG, Solomon KR. Microcosm Evaluation of the Environmental Fate of Two Potential PBDE Replacements. SETAC Europe 18th Annual Meeting. May 25-29 2008. Warsaw, Poland.

SCHOLARLY AND PROFESSIONAL ACTIVITIES

2006 - Present	Member, SETAC Laurentian Chapter
2007 - Present	Member, SETAC North America
2008 - 2010	Graduate Representative, Departmental Health and Safety Committee
2008 - 2009	College Representative, OAC Graduate Social Committee

VOLUNTEER EXPERIENCE

Laurentian SETAC Annual General Meeting. *June 4th, 2010*. Niagara-on-the-Lake, ON, Canada. Assisted in the organisation and delivery of conference sessions

IAGLR: 53rd Annual Conference on Great Lakes Research. *May 17-21, 2010*. Toronto, ON, Canada. Assisted in the organisation and delivery of conference sessions

The Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games. *February 12-28, 2010*. Vancouver, BC, Canada. Event Services Host, responsible for crowd management, ticket taking, ushering, and access monitoring at Olympic venues.

All Hands Volunteers. Project Gonaives. *November 22- December 7, 2008*. Gonaives, Haiti. Assisted with clean-up, community recovery and reconstruction projects in response to mudslide disaster

OTHER SKILLS

Application of IT skills Proficient with word processing, spreadsheets, various statistical software (e.g., SAS, SPSS, SigmaStat, R), data and file management, database searches, GIS

Communication Strong ability to produce clear, structured written work
Maintain a personal blog, with an interest in scientific communication (<http://onaquasirelatednote.wordpress.com>)

Teamwork

Frequent collaborator on the initiation of other graduate students' mesocosm projects. Captain of Ultimate Frisbee team, include successful tournament bids