

Audrey BRUNEAU

Ecotoxicologist,  
Ph.D.



37 years old - Driving License -  
La Tremblade France

## CONTACT

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## ABOUT ME

An ecotoxicologist with a PhD in Biology and a thesis in marine biology, I have been working in the environmental field since 2007. I possess an expertise in environmental toxicology, specializing in issues relating to pollution and emerging contaminants (nanoparticles, oils sands extracts, metals, wastewaters) which I acquired while studying for my PhD and working with Environment Canada. I am also comfortable interacting with companies, universities and government. I have supervised people (master and bachelor students), written scientific reports and peer reviewed publications. I have excellent communication skills to convey information to people clearly and simply.

Oceanography,  
immunotoxicology,  
nanotoxicology, emerging  
contaminants, pollution,  
ecosystem



LinkedIn



Researchgate

## EXPERIENCES

### Head of Laboratoire Environnement Ressources des Pertuis Charentais

IFREMER - Since September 2017

### Scientist (volunteer)

David Suzuki Foundation - Since February 2017

- report writing
- information research
- conference synthesis

### Project manager- Risk assessment

Sanexen Services Environnementaux - February 2016 to November 2016 - Full-time - Brossard - Canada - Québec

- Modelling for detailed human health and ecological risk assessment (DQRAHH and ERE)
- Literature search on the background level contamination of a historical industrial site
- Analogues researches with ToolBox V3.4 (read-across assessment framework ECHA) and other predictive tools
- Report and Toxicological review writing
- Toxicological data researches
- Data compilation

### Environmental Consultant

Environment Canada - February 2015 to June 2015 - Full-time - Montréal - Canada

- Analysis, interpretation and presentation of data, statistics
- Scientific manuscript and government report writing

### Postdoctoral fellowship - municipal water and wastewater section

Environment Canada - September 2012 to February 2015 - Full-time - Montreal - Canada - Québec

- Evaluation of silver nanoparticles fate in different aquatic media
- Evaluation of the toxicological effects of nanoparticles on aquatic model species (bivalves, fish)
- -Project management
- -Writing technical/ scientific reports to provide scientific advice to support decision-making (Chemical Management Plan)
- -Experimental design and schedule management
- -Multidisciplinary collaborations (biologists, chemists)
- -Collaborations: Universities, research centres, École Polytechnique de Montréal, government
- -Experience in student supervision (master and bachelor degrees)
- -Experimental techniques: flow cytometry, spectrophotometry, qPCR, graphite furnace, ICP-MS, filtrations and ultrafiltrations

### Postdoctoral fellowship - emerging methods section

Environment Canada - January 2012 to February 2015 - Full-time - Montréal - Canada - Québec

- Development of detection tools for identification of priority substances include in the Oils sands program (naphthenic acids and PAHs derived).
- Development of genomic tools and cytometry on rainbow trout and aquatic invertebrates
- -Experimental design and schedule management
- -Multidisciplinary collaborations (biologists, chemists)
- -Immune effects study with flow cytometry and PCRq
- -Oils sand extraction in laboratory according to protocol establishes previously
- -Project management (contribution to mussel caging experiment (in situ) in Alberta and in Montreal effluent plume).

## **Environmental Consultant (biotechnology)**

CREO, Envirocompétences - July 2011 to December 2011

- ▶ Report writing
- ▶ Scientific advice on bioreactor for an online game

## **Laboratory research agent**

INRS-Institut Armand-Frappier - June 2011 to August 2011 - Part-time - Laval - Canada - Alberta

- ▶ Field sampling for the breeding grounds of starlings (Pancanadian project)
- ▶ Installation of fishing net, captures of poulamons (*Microgadus tomcod*) and samplings.
- ▶ Results management and statistical analyses of experiences realized on trouts and chickens exposed to metallic contaminants.

## **President of the organizing committee of the Armand Frappier congress 2009**

Armand Frappier Fondation - July 2008 to December 2009 - Student Project - Laval - Canada - Québec

- ▶ Congress organized for scientific community
- ▶ The major aim is to value the scientific researches and exchange on the biomedical and biotechnological research progresses
- ▶ Provincial Event (universities in Quebec)
- ▶ Invitation of international speakers
- ▶ Management of a working team
- ▶ Research of sponsor at the ministerial and professional scale
- ▶ Manage the logistic and the good progression of the event
- ▶ Communication with the public and scientific popularization

## **Presenter scientific Popularizer**

Musée Armand Frappier - October 2007 to March 2008 - Temporary Replacement - Laval - Canada - Québec

- ▶ Popularization of scientific researches on the biotechnologies with young people from 10 to 18 years old
- ▶ Supervisions of practical class

## **Trainee in marine mammals field, analyzes of the grey seal diet**

Maurice Lamontagne Institute (Fisheries and Oceans Canada) - January 2007 to June 2007 - Internship - Mont Joli - Canada - Québec

- ▶ Training course supervised by Dr Hammill, on the grey seal diet
- ▶ Sampling on common seals for data in ecotoxicology
- ▶ Participation to the tagging recapture techniques on young seals in the Prince Edward Island area
- ▶ Dissection of marine mammals
- ▶ Identification of stomach contents (taxonomy)
- ▶ Field sampling in Maritime (Quebec)
- ▶ Biostatistics
- ▶ Data base management

## **Trainee and Temporary replacement, scientific Popularizer**

Grand Lyon Aquarium - March 2004 to August 2004 - Temporary Replacement - Lyon - France

- ▶ Reports on aquatic themes (biologists days)
- ▶ Contribution to the implementation of signalling system in the aquarium
- ▶ Scientific popularization
- ▶ Supervision of groups (different size of groups)
- ▶ Good knowledge on the marine world

## SKILLS

### Projects management

- Development of multidisciplinary collaborations
- Management of a team and a schedule
- Research for sponsor
- Communications and speakers invitations
- Students and Trainee supervision

### Communication

- Work with different kinds of public and adapt my scientific language
- Bibliographical researches and taxonomy
- Communicate with groups of different sizes (individual intervention, or in group 20-30 persons and +)

### Skills Evaluation

- Submission of articles to international reviews
- Participation at national and international conferences (oral presentations and posters)
- Realization of scientific reports

### Immunotoxicology / nanotoxicology / emerging contaminants

- Chemistry of emerging contaminants, availability in the environment
- Biomarker use (viability, phagocytosis, cycle cellular, apoptosis, oxydative stress, metallothioneins, transformation lymphoblastic transformation)
- Toxin action on the cellular mechanisms
- Flow cytometry (many immune parameters : viability, phagocytosis, lymphoblastic transformation, thiols, ROS, apoptosis, cellular cycle, metallothioneines)
- Radioactivity manipulation (prolifération lymphoblastic transformation tritiated thymidine )
- Manipulation of different animal models (human blood, mice, fish, bivalves)

### Ecology

- Taxonomy
- Field sampling in extrem conditions (Gulf of the Saint Lawrence islands in winter) (marking, grey seals tagging )
- Field sampling aboard a boat (Collection of samples for the biology, the physics, the chemistry and the geology)
- Field sampling in Saguenay fjord (bivalves studies)

### Bioinformatic

- Sigmaplot
- Statistica7, XL stats, Spad, Stella,
- Primer
- Cellquest Pro, FlowJo, WinMDI 2.9
- EndnoteX4
- Office 2003-2007
- Photoshop

## EDUCATION

### Certificate in Project management

HEC MONTRÉAL

Since 2014

[http://www.hec.ca/programmes\\_ formations/certificats/offerts/gestion\\_projets/](http://www.hec.ca/programmes_ formations/certificats/offerts/gestion_projets/)

## **Ecotoxicological risk evaluation for the management of contaminated sites**

UNITÉ SOUTIEN EXPERT ET SITES CONTAMINÉS. DIVISION DES ACTIVITÉS DE PROTECTION DE L'ENVIRONNEMENT

October 2013

## **Offshore emergencies (003-FUM-12)**

ENVIRONMENT CANADA

May 2012

## **Ph.D. in biology**

INRS-INSTIUT ARMAND-FRAPPIER AND UNIVERSITÉ DE BRETAGNE OCCIDENTALE

September 2007 to September 2011

Toxicity of CdS / CdTe quantum dots nanoparticles and silver nanoparticles on the performances of the immune system.

## **Master in Oceanography**

UNIVERSITÉ DU QUÉBEC À RIMOUSKI

September 2006 to June 2007

Oceanography

## **Master**

UNIVERSITÉ D'AIX MARSEILLE 2

September 2005 to June 2007

Marines biology and ecology