

# PATRICK BOILY

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## OBJECTIVE

Seeking a challenging position where I can apply high level skills in problem-solving, modeling, analysis and writing. I have a strong background in mathematics/statistics and in their application to various endeavours, as well as extensive experience managing various projects from conception to completion.

## CORE COMPETENCIES

- ❑ Creative problem-solver
- ❑ Dynamic team leader and team player
- ❑ Quick and efficient learner and educator
- ❑ Accomplished technical and scientific writer (fluent in English and French)
- ❑ Meticulous data gatherer and processor

## TECHNOLOGICAL & SCIENTIFIC SKILLS

- ❑ Skilled mathematician with sound statistical knowledge
- ❑ Computer skills: MATLAB, Maple, SAS, SQL, R, SPSS Clementine, Perl, MS Office, LaTeX, some Visual Basic, some C/C++/C#
- ❑ Successful practitioner of the scientific method

## EDUCATION & PERSONAL DEVELOPMENT

**Ph.D. (Mathematics)** 2000 – 2006

*University of Ottawa, Ottawa, Ontario*

Thesis: Spiral Wave Dynamics under Full Euclidean Symmetry-Breaking

Topics: modeling spiral wave dynamics; numerical analysis and implementation.

Results published in the *Journal of Nonlinear Science*

**M.Sc. (Mathematics)** 1998 – 2000

*University of Ottawa, Ottawa, Ontario*

Thesis: Analyse numérique des bifurcations dans les systèmes dynamiques paramétrés

Topics: bifurcations in ordinary differential equations; numerical analysis and implementation.

**B.Sc. (Mathematics)** 1994 – 1998

*University of Ottawa, Ottawa, Ontario*

Magna cum Laude, Dean's List

**Graduate-level Statistics Courses (6)** 2007 – 2009

*Carleton University, Ottawa, Canada*

## EDUCATION & PERSONAL DEVELOPMENT (continued)

**Various SAS and SQL Courses** 2010 – 2011  
*SAS Institute and Learning Tree*

**Public Service Courses** 2008 – 2010  
*Canada School of Public Service, Ottawa, Ontario*  
E131: Orientation to the Public Service  
G124: Essentials of Supervising in the Public Service  
M711: Developing a Statement of Work and Selection Criteria  
P609: Preparing for Selection Interviews

## SELECTED ACHIEVEMENTS

**Designed and implemented** the Canadian Vehicle Use Study, which provides provincial and national estimates of 60 vehicle related quantities, including fuel consumption, kilometers traveled and passenger-kilometers traveled for Transport Canada.

**Designed and implemented** a model to simulate the effects of various scenarios on offender populations for Correctional Service of Canada.

**Designed** a SAS-based model imputing missing Blood Alcohol Content data in the National Collision Database. Accepted for presentation at the Transportation Research Board.

**Co-authored** a Road Safety paper showing a link between Canadian road fatalities and the state of the Canadian economy, presented at the Canadian Multi-Disciplinary Road Safety Conference in Saskatoon.

**Designed** an ecological model and graphic user interface at the behest of Parks Canada and Little Red River Cree Nation to be used to assess the ecological damage associated with various bison depopulation scenarios in Wood Buffalo National Park, Alberta/NWT.

**Extended** a recent theory of spiral waves and **published** my results in the *Journal of Nonlinear Science* (October 2007).

**Presented** the results of my research in mathematics to experts in various conferences.

**Taught** 40 courses in mathematics and statistics at universities in the Ottawa area.

**Taught** myself, over a period of a single month, the pre-requisites necessary to take advanced statistics courses in data mining and sampling design, as well as how to use the statistical softwares SAS, R, SPSS Clementine.

**Co-authored** a calculus textbook and **provided** first year francophone students in management and commerce at the University of Ottawa with a quality affordable alternative.

**Completed** over 40 university courses in mathematics and statistics.

## RELEVANT EXPERIENCE

### **Economic Advisor (EC-06)**

2012 –

*Transport Canada, Ottawa, Ontario*

Analyst for the Economic and Environmental Analysis and Research group in the Policy directorate. Duties include (but are not limited to) the continuing design, implementation, documentation and fine-tuning of nation-wide ongoing Canadian Vehicle Use Study and the design of the Heavy Duty Vehicle Use Study.

### **Senior Consultant (EC-06)**

2011

*Public Works and Government Services Canada, Ottawa, Ontario*

Consultant with the Finance and Analytics group at Government Consulting Services, until the group's demise. Duties included (but were not limited to): the design and implementation of a model to simulate the effects of various scenarios on offender populations for Correctional Service of Canada, the design of a model to optimize the transportation schedule on Parliament Hill, the design of a resource management visualization tool for the Department of National Defence, continuing work on the Canadian Vehicle in Use Survey for Transport Canada and the preparation of numerous Memoranda of Understanding with various government agencies.

### **Research Analyst (EC-05/06)**

2009 – 2010

*Transport Canada, Ottawa, Ontario*

Analyst for the Evaluation & Data Systems group in the Road Safety and Motor Vehicle division. Duties included (but were not limited to): road safety research through mathematical and statistical means, the design and analysis of a Field-of-View study, the design of a Blood Alcohol Content imputation algorithm for missing data in the National Collision Database, the review of selected papers for inclusion in the Transportation Research Record of the Transportation Research Board, the procurement of services from researchers at HEC Montréal in regards to a vehicle incompatibility study, the procurement of a motorcycle VIN database from Sanford-Evans and the sampling design of a pilot for a revamped Canadian Vehicle Survey.

### **Lecturer**

1999 – 2006, 2008 – 2009

*University of Ottawa, Ottawa, Ontario*

*Université du Québec en Outaouais, Gatineau, Québec*

Planned, organized, taught and graded 40 university-level mathematics and statistics courses.

### **Methodologist (MA-02)**

2008

*Statistics Canada, Ottawa, Ontario*

Methodologist for the Canadian Health Measure Survey (CHMS), Household Survey Division. Duties included (but were not limited to): the selection of the survey sample from a multi-phase design and the computation of the exact variance for numerous laboratory variables associated with the CHMS.

**Project Officer (FSWEP) 2008**

*Canada Border Services Agency, Ottawa, Ontario*

Co-op student in the Harmonized Risk Scoring and Advanced Trade Data team, Commercial Projects Division. Researched new data-mining techniques to enhance the effectiveness of the CBSA risk scoring algorithm for marine cargo containers.

**Professor 2006 – 2007**

*University of Ottawa, Ottawa, Ontario*

Planned, organized, taught and graded university-level mathematics courses at the Department of Mathematics; engaged in mathematical research and published results in academic journals.

**Research Associate 2004 – 2007**

*Institute of the Environment, Ottawa, Ontario*

Created a mathematical model for Parks Canada and Little Red River Cree Nation to minimize the ecological damage associated with various bison-culling strategies used to try to rid Wood Buffalo National Park of bovine tuberculosis; designed a graphical user-interface to assist the involved managers in their decision making; wrote a user manual.

## **PERSONAL**

**Language Skills:** Fluent in English (EEE, Federal Government rating) and French (mother tongue).

**Active Interests:** Cycling, Badminton, Hockey, Reading (current events, scientific and technological trends), Crossword puzzles, Guitar.

**Other:**

- ❑ Member of former rock band Treebeard (1993 – 2005) which produced 5 CDs, 4 videos and was recognized as Ottawa's "Favorite Rock Band" in 2000.
- ❑ Member of a lifeguard team (1999 – 2000) that won a gold medal in the Priority Assessment event at 1999 Ontario Lifeguard Championships.
- ❑ Member of three senior hockey teams in the Ottawa area.
- ❑ Volunteer for the Ottawa Otters Special Olympics Swim Team.

**Ability to travel** and to work overtime as required.

Federal Government Security Clearance: Level II (Secret) - valid until November 18, 2018.