

# CURRICULUM VITAE

ISABELLA R. GHEMENT, Ph.D.

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## CONTACT INFORMATION

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## PERSONAL INFORMATION

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- **Citizenship**
  - Romanian National and Canadian Citizen.
- **Marital Status**
  - Married.

## EDUCATION

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- **University of British Columbia**, Vancouver, British Columbia, Canada.
  - Ph.D. in Statistics, 1998-2005.
  - Dissertation Topic: “*Inference in Partially Linear Models with Correlated Errors*”.
  - Advisor: Dr. Nancy Heckman, Department of Statistics.
- **University of Bucharest**, Bucharest, Romania.
  - M.Sc. in Stochastic Processes and Statistics, 1996-1997.
  - Advisor: Dr. Monica Dumitrescu, Department of Probabilities and Statistics.
- **University of Bucharest**, Bucharest, Romania.
  - B.Sc. in Applied Mathematics, 1991-1996.
  - Advisor: Dr. Monica Dumitrescu, Department of Probabilities and Statistics.

## CURRENT POSITION

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- **Gument Statistical Consulting Company**, Vancouver, British Columbia, Canada, 2006-Present.
  - Self-Employed Statistical Consultant and Trainer.
- **Sauder School of Business**, University of British Columbia, Vancouver, British Columbia, Canada, September 2007-Present.
  - Sessional Lecturer in Statistics.

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## CONSULTING EXPERIENCE

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- **Statistical Consultant, Ghement Statistical Consulting Company, 2006-Present.**
  - Performed meta-analyses and mixed treatment comparison meta-analyses for local clients (e.g., Oxford Outcomes) using STATA, R and WinBUGS. Some of these analyses resulted in peer-reviewed publications.
  - Engaged by the BC Ministry of Healthy Living and Sports to prepare two statistical reports investigating the time trends in various air pollutants measured in different locations in British Columbia, Canada.
  - Engaged by Canada Revenue Agency to prepare three statistical reports investigating the usefulness of various credit scores in predicting the propensity of tax debt payment.
  - Engaged by a leading ecological consulting company to prepare a statistical project proposal for a long-term impact study sponsored by B.C. Hydro through public tender. The proposal required the selection of the most appropriate methods for data collection and analysis in the context of the study. My consulting client was successful in winning the bid for the study.
  - Completed the courses STAT 550: Techniques of Statistical Consulting and STAT 551: Consulting Practicum offered by the Department of Statistics, University of British Columbia, in collaboration with the Statistical Consulting and Research Laboratory (SCARL).
  - Contributed to the developing of time series forecasting software for a private software firm headed by Dr. Johann Rost, Bucharest, Romania, 1997-1998.
  - Examples of Statistical Reports Authored:
    1. *Issues Related to Analyzing the Mexico City Pollution Data* (Report prepared for Dr. John Petkau, Professor, Department of Statistics, University of British Columbia).
    2. *Assessing the Effectiveness of a Course in Teaching Physicians to Use Evidence-Based Medicine in Their Practices* (STAT 551 Project, [SCARL File 00-01-001](#), [SCARL Client: Dr. Kendall Ho](#), Associate Dean and Director, Division of Continuing Medical Education, Faculty of Medicine, University of British Columbia).

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## CONSULTING PAPERS

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- **Incorporating multiple interventions in meta-analysis: an evaluation of the mixed treatment comparison with the adjusted indirect comparison**, Christopher O'Reagan, Isabella Ghement, Oghenowede Eyawo, Gordon H Guyatt and Edward J Mills.  
*Trials*, 2009, **10**:86.
- **Efficacy and safety of statin treatment for cardiovascular disease: a network meta-analysis of 170 255 patients from 76 randomized trials**, E.J. Mills, P. Wu, G. Chong, I. Ghement, S. Singh, E. Akl, O. Eyawo, G. Guyatt, O. Berwanger and M. Briel.  
*Accepted for publication in [Q J Med](#).*
- **Estimating the Power of Indirect Comparisons: A Simulation Study**, Edward Mills, Isabella Ghement, Christopher O'Reagan and Kristian Thorlund.  
*Submitted to [PLOS One](#).*
- **Multiple Treatment Comparison Meta-Analyses in Oncology: A step forward into complexity**, Edward Mills, Isabella Ghement, Kristian Thorlund, Steven Kelly, Milo Puhan and James Wright.  
*Submitted to the [Journal of Clinical Oncology](#).*

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## RESEARCH EXPERIENCE

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*Research experience developed independently of the consulting-driven research experience:*

- **Research Assistant**, Department of Statistics, University of British Columbia, 1999-2006.
  - Developed statistical methodology for conducting inference in partially linear models with correlated errors.  
*Research Advisor: Dr. Nancy Heckman.*
  - Used semi-parametric additive modeling techniques to analyze pollution/health data and assess the effect of particulate matter on human health.  
*Research Advisors: Dr. Nancy Heckman and Dr. John Petkau.*
  - Collaborated with biologists from the University of British Columbia on a research problem involving mathematical modeling of protein evolution. The research required carrying out simulations to test the validity of the proposed mathematical models.  
*Research Advisor: Dr. Bertrand Clarke.*
  - Carried out theoretical work on robust estimation of scale in non-parametric regression.  
*Research Advisor: Dr. Ruben Zamar.*
- **Research Assistant**, Centre for Mathematical Statistics, Romanian Academy, Bucharest, Romania, 1996-1998.
  - Developed statistical methodology for analyzing data from repeated surveys based on time series techniques.  
*Research Advisor: Dr. Tiberiu Postelnicu.*

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## RESEARCH PAPERS

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- **Seasonal Confounding and Residual Correlation in Analyses of Health Effects of Air Pollution**, with Dr. Nancy Heckman and Dr. John Petkau (University of British Columbia).  
*Environmetrics*, 2007, Vol. 18, Issue 4, pp. 361-459.
- **Robust Estimation of Error Scale in Nonparametric Regression Models**, with Dr. Ruben Zamar (University of British Columbia) and Marcelo Ruiz, Ph.D. Candidate (Universidad Nacional de Rio Cuarto).  
*Journal of Statistical Planning and Inference*, 2008, Vol. 138, Issue 10, pp. 3200-3216.

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## RESEARCH INTERESTS

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- Mixed Treatment Comparisons.
- Adjusted Indirect Comparisons.
- Impact of Air Pollution on Human Health.
- Inference in Partially Linear Models with Correlated Errors.
- Robust Estimation of Scale in Nonparametric Regression Models.

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## TRAINING AND TEACHING EXPERIENCE

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- **Statistical Trainer and Consultant, Gherent Statistical Consulting Company, 2006-Present.**

- Designed, organized and delivered the public, one-day workshops “A Basic Course on Analyzing Data Using R” (March 13-14, 2008; May 28-29, 2008), “An Introduction to the Statistical Software Package R” (February 21, May 2, June 20, November 5 and November 14, 2007; October 23-24, 2008; May 7-8, 2009; October 1-2, 2009; November 5-6, 2009; April 15-16, 2010), “Simple and Multiple Linear Regression Analyses in R” (April 11 and November 21, 2007) and “Advanced Statistical Modeling Using the Statistical Software Package R” (June 21, 2007; December 4-5, 2008; May 20-21, 2010).
- Designed and conducted a one-day private training session for researchers affiliated with Environment Canada on the topics of Principal Component Analysis and Generalized Least Squares Regression (March, 2007).
- Designed and conducted a one-day private introductory R session for researchers affiliated with the Department of Biological Sciences at the Simon Fraser University in Vancouver, Canada (November 5, 2007).
- Designed and conducted a one-day private training session for researchers affiliated with the Pacific Biological Station in Nanaimo, B.C., Canada on microarray data analysis using R and Bioconductor (May 22, 2008).
- Designed and conducted several private training sessions on experimental design using R and Minitab for researchers affiliated with Ballard Power Systems in Burnaby, B.C., Canada (October, 2008).
- Designed and conducted a one-day private introductory R session for researchers affiliated with the B.C. Ministry of Forests and Range (November 20-21, 2008).
- Designed and conducted a one-day private introductory R session for researchers affiliated with Rescan Environmental Consulting Ltd. In Vancouver, B.C., Canada (October 29, 2009).
- Designed and conducted a one-day private introductory R session for researchers affiliated with the Pacific Biological Station in Nanaimo, B.C., Canada (December 3-4, 2009).
- Designed and conducted a one-day private advanced R session for researchers affiliated with the Pacific Biological Station in Nanaimo, B.C., Canada (December 14, 2009).
- Designed and conducted a one-day private advanced R session for researchers affiliated with the Pacific Biological Station in Nanaimo, B.C., Canada (December 14, 2009).
- Designed and conducted a two-day private introductory R session for researchers affiliated with the Child and Family Research Institute (May 27 and June 2, 2010).

**• Sessional Lecturer, Operations and Logistics Division, Sauder School of Business, University of British Columbia, September 2007-Present.**

- Responsible for teaching COMM 581 - "Statistical Methods I", an advanced graduate course on multiple linear regression models and generalized linear models, and COMM 291 – "Applications of Statistics In Business", an introductory undergraduate course on business statistics.
- Prepared and presented COMM 291 and 581 course material, clarified statistical concepts and facilitated discussion with students.
- Designed and evaluated the COMM 581 midterm exam and offered exam preparation guidance to the students.
- Designed the final COMM 581 project and supervised project preparation.
- Designed and maintained the WebCT-based course website for both COMM 291 and 581.

**• Sessional Lecturer, Department of Statistics, University of British Columbia, Summer 2001 and Spring 2004.**

- Responsible for teaching STAT 200 - "Elementary Statistics with Applications", an introductory Statistics course for undergraduate students with a Science background.
- Prepared and presented course material, clarified statistical concepts and facilitated discussion with students.
- Administered quizzes to students to help them gauge their progress in the course and identify and overcome difficulties in understanding certain statistical concepts.
- Designed and evaluated midterms and final exams and offered exam preparation guidance to the students.
- Supervised the work of the Teaching Assistants who conducted the computer laboratories for the course.
- Designed and maintained the HTML-based course website.

**• Organizer and Presenter, An Introduction to the R Statistical Package Workshop, University of British Columbia, January 2002, August 2002 and September 2003.**

- Organized and presented three introductory workshops devoted to teaching participants the efficient use of the statistical package R for carrying out exploratory and formal data analyses in a Windows-based environment. The workshops were directed towards graduate students and post-graduate researchers. Two of these workshops were jointly organized with my colleague Lisa Kuramoto, M.Sc.

**• Head Teaching Assistant, University of British Columbia, 2002, 2003 and 2005.**

- Coordinated the work of Teaching Assistants appointed for the course STAT 200 - "Elementary Statistics with Applications".

**• Teaching Assistant, University of British Columbia, 1998-2005.**

- Conducted laboratory sessions, tutorials and office hours for the following courses: STAT 200 (introductory Statistics course for undergraduate Science students), STAT 203 (introductory Statistics course for undergraduate students from non-Science backgrounds), STAT 302 (Introduction to Probability) and STAT 306 (Applied Regression Analysis).

## TEACHING TRAINING

- **Faculty Instructional Skills Workshop.** Centre for Teaching and Academic Growth, University of British Columbia, October 13, 20 and 27, 2007.
  - Attended a 3-day workshop designed to enhance the teaching effectiveness of both new and experienced instructors.
- **TAG New Faculty Summer Series. The Art of Evaluation: Creating Rubrics.** Centre for Teaching and Academic Growth, University of British Columbia, August 23, 2007.
  - Attended a half-day workshop for new faculty members with a view to learning the art of student evaluation.
- **TAG New Faculty Summer Series. Course Planning: Creating Your Course from A to Z.** Centre for Teaching and Academic Growth, University of British Columbia, August 22, 2007.
  - Attended a 1-day workshop for new faculty members with a view to learning the ins and outs of academic course planning.
- **TAG New Faculty Summer Series. Surviving and Thriving the First Day and First Week of Class.** Centre for Teaching and Academic Growth, University of British Columbia, August 21, 2007.
  - Attended a half-day workshop for new faculty members with a view to mastering the instructional challenges of the first day and first week of a new class.
- **Instructional Skills Workshop for Graduate Students, 2001.**
  - Attended a 3-day Instructional Skills Workshops offered by The Centre for Teaching and Academic Growth (TAG) at the University of British Columbia. The workshop included the opportunity to teach three short lessons and receive constructive feedback from participants and facilitators, as well as discuss issues related to planning a lesson, asking good questions, providing feedback to students and using audio-visual techniques in the classroom.
- **International Teaching Assistant Training Program, 1999.**
  - Attended a 3-month program for graduate students who had recently arrived in Canada with a view to adapting communication and teaching skills to Canada.

## COMPUTER SKILLS

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- Proficiency with R, a language and environment for statistical analysis and graphics.
- Proficiency with WinBUGS, a programming environment for Bayesian data analysis.
- Proficiency with STATA, a programming environment for data analysis and graphics.
- Proficiency with S-PLUS, a programming environment for data analysis and graphics.
- Proficiency with MATLAB, a flexible environment for visualizing data, performing data analyses and programming algorithms.
- Proficiency with JMP, a menu-based statistical software package.
- Familiarity with SAS and SPSS, programming environments for data analysis and graphics.
- Proficiency with the programming language C.
- Proficiency with LaTeX, a scientific document preparation system.
- Proficiency with web page design using HTML and CSS.
- Proficiency with the operating systems Unix and Windows.

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**INVITED TALKS**


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- **Inference in Partially Linear Models with Correlated Errors**, November 2005, Department of Statistics, University of British Columbia, Vancouver, British Columbia.
- **Smoothing Parameter Selection in Partially Linear Models with Serially Correlated Errors**, July 2004, UW/EPA NW Research Centre for Particulate Air Pollution and Health, University of Washington, Seattle, Washington.
- **Smoothing Parameter Selection in Partially Linear Models with Serially Correlated Errors**, June 2003, Annual Meeting of Statistical Society of Canada, Dalhousie University, Halifax, Nova Scotia.

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**AWARDS**


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- **Statistical Society of Canada Travel Award, 2003.**  
Travel award offered by the Biostatistics Section of the Statistical Society of Canada to graduate students invited to attend the 2003 Statistical Society of Canada meeting in Halifax, Nova Scotia, Canada.
- **Pacific Institute for Mathematical Sciences Travel Scholarship, 2001.**  
Travel award offered by the Pacific Institute for Mathematical Sciences to selected graduate students attending the Workshop in Statistical Genetics and Computational Molecular Biology, Seattle, Washington, December 16-18, 2001.
- **The Soros Foundation for an Open Society Travel Award, 1998.**  
Travel award sponsoring the air travel expenses of students accepted into applied M.Sc. or Ph.D. programmes offered by North-American Universities.
- **Graduate Student Fellowship, University of Bucharest, Romania, 1996-1997.**  
Merit scholarship awarded to graduate students based on their academic performance.
- **Undergraduate Student Fellowship, University of Bucharest, Romania, 1994-1996.**  
Merit scholarship awarded to undergraduate students based on their academic performance.

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**STATISTICAL CONFERENCES AND WORKSHOPS ATTENDED**


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- **4<sup>th</sup> Seattle Symposium in Biostatistics**, Seattle, Washington, U.S.A., November 20-23, 2010.
- **Joint Statistical Meetings (JSM)**, Vancouver, British Columbia, July 31-August 5, 2010.
- **Pacific Northwest Statistics Meeting**, Kelowna, British Columbia, October 1, 2005.
- **Pacific Northwest Statistics Meeting**, Vancouver, British Columbia, October 8, 2004.
- **Functional Data Analysis Workshop**, Vancouver, British Columbia, December 10-11, 2004.
- **Air Quality and Health Seminar: "Air Pollution and Health in BC and the Pacific Northwest...how big a problem?"**, Vancouver, British Columbia, October 21, 2003.
- **31st Annual Meeting of the Statistical Society of Canada**, Dalhousie University, Halifax, Nova Scotia, June 8 -11, 2003.
- **International Conference on Current Advances and Trends in Nonparametric Statistics**, Crete, Greece, July 15 -19, 2002.
- **Workshop in Statistical Genetics and Computational Molecular Biology**, Seattle, Washington, U.S.A., December 16 -18, 2001.
- **Applications in Smoothing Workshop**, University of British Columbia, June 23-25, 1999.

**NON-STATISTICAL CONFERENCES AND WORKSHOPS ATTENDED**

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- **Project Management Principles and Practices, 2004.**  
2-day workshop on project management offered by the Faculty of Graduate Studies, University of British Columbia, through the Professional Development Initiative.
- **Learning to Lead, 2003.**  
3-day leadership conference held by the Minerva Foundation for BC Women.

**UNIVERSITY SERVICE**

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- **Councillor, Graduate Student Society of UBC, August 2002-April 2003.**  
Elected by the graduate students in the Department of Statistics, University of British Columbia, to represent the Department in the Graduate Student Society Council, the ultimate decision-making body of the Graduate Student Society of University of British Columbia. My responsibility was to voice any concerns graduate students in the Department of Statistics might have about issues pertaining to the entire body of graduate students at the University of British Columbia and to act as a liaison between the Council and the Department of Statistics.
- **Department Representative, CUPE Local 2278, University of British Columbia, September 2002-August 2003.**  
All students employed as teaching assistants (TAs) or markers at the University of British Columbia are members of a large community called Canadian Union of Public Employees (CUPE) Local 2278. This union provides TAs with a variety of informal/formal assistance based on their interests and concerns every year. My responsibility was to act as a liaison between the Department of Statistics and CUPE.
- **Originated and coordinated** graduate students' successful efforts in nominating Ms. Christine Graham, formerly Graduate Student Co-ordinator in the Department of Statistics, University of British Columbia, for the 2002 Graduate Student Society Service Award.

**PROFESSIONAL MEMBERSHIPS**

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- **The American Statistical Association.**
- **The Statistical Society of Canada.**

**EXTRA-CURRICULAR INTERESTS**

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- I enjoy reading, sailing and vacationing in countries that are new to me.

**REFERENCES**

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- I would be pleased to supply references upon request.