

## Lilia Leticia Ramírez Ramírez, Ph.D.

Postdoctoral researcher  
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### ACADEMIC EDUCATION

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**2003-2008. Ph.D. (Statistics).** Thesis: “On the dynamics of infectious diseases in non-homogeneous populations”. Supervisor: Dr. Mary E. Thompson. University of Waterloo. Canada.

**1997-2000. M.Sc. (Statistics).** Thesis: “Statistic Inference of Plants’ DNA using Flow Citometry”. Supervisor: Dr. Eloísa Díaz Francés Murgía. University of Guanajuato (UG) / Centre for Mathematical Research (CIMAT), Guanajuato, Mexico.

**1992–1996. B.Sc. (Actuarial Science).** Thesis: “Some Generalizations of the Law of Large Numbers and the Borel-Cantelli Lemma”. Supervisor: Dr. Begoña Fernández Fernández. Autonomous National University of Mexico (UNAM), Mexico.

**November 1994-October 1995.** Courses of Introduction to Personal Computers, Programming Techniques, and C Programming Language. (100 hrs). Academic Computing Centre, UNAM, Mexico.

### PROFESIONAL EXPERIENCE

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#### Postdoctoral researcher

- **Since January 2009.** Postdoctoral researcher working in a joint project with the Infonaut Inc., the Region of Peel (Public Health), and the Ontario Agency for Health Protection and Promotion (OAHPP). University of Waterloo. Canada.

#### Course Instructor

- **Fall terms 2004 and 2006.** Lecturer of Stat 202/204 and Stat 203. *University of Waterloo.* Canada.

#### Research Assistant

- **Winter Term 2005.** Project: Forecasting of some annual incidence health rates on the region of Waterloo. Joint project with the Public Health office in the region. With the supervision of Dr. Mary Thompson, *University of Waterloo.* Canada.
- **October–December 2000.** Project: Edition of class notes on Probability and Statistics for students in the Master program of Computer Sciences. With the supervision of Dr. Johan Van Horebeek. *CIMAT.* Mexico.

#### Regional Researcher

- **February 2001-August 2003.** In the department of Regional Research we analysed demographical, economical and sociological information of the state of Guanajuato. We also organized and analyzed two surveys. One was orientated to study the drugs habits among teenagers, and the other explored some economical and well-being characteristics of families with at least one member who had migrated to the U. S. A.. Population Council of Guanajuato. *Government of the State of Guanajuato.* Mexico.

#### Teaching Assistant

- **Fall 2003 – Spring 2008.** Teaching Assistant in courses such as: Stat 206, Stat 331, Math 118, Stat 231, and Stat 230. *University of Waterloo.* Canada.

- **Semester 2003-I, 1998-II and 2000-I.** Teaching assistant for graduate and undergraduate classes of Statistical Inference III (Statistical Inference in Science) and Statistics and Probability Elements. Course instructors: Dr. Miguel Nakamura Savoy and Dr. David A. Sprott. *UG-CIMAT*. Mexico.
- **Nov 1996-April 1997.** Teaching assistant with 2 weekly hours of problems laboratory. Undergraduate class of Probability II. Faculty of Sciences. *UNAM*. Mexico.

#### REFEREED PUBLICATIONS

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- Gel, Y. and Ramírez Ramírez, L. L. (Work in progress). On Bayesian inference and the geostatistical output perturbation method.
- Ramírez Ramírez, L. L. and Thompson, M. E. (Submitted to *Advances in Applied Probability*). Infectious diseases on networks.
- Ramírez Ramírez, L. L. and Thompson, M. E. (Submitted to *Advances in Applied Probability*). Infectious diseases on hierarchical networks.
- Ramírez-Ortegón, M. A., Tapia, E., Ramírez Ramírez, L. L., Cuevas, E. and Rojas, R. (Submitted to *Pattern Recognition*). A new binarization method based in edge detection and gray-intensity histogram.
- Chávez-Hernández, A. M., Macías-García, L. F., Ramírez, L. and Palatto-Merino, H. (2004). Epidemiología del suicidio en el estado de Guanajuato. *Salud Mental*, 27 (2):15-20.
- Chávez Hernández, A. M., Macías García, L. F. Ramírez Ramírez, L. y Palatto Merino, H. (2003). Capítulo 1: Datos epidemiológicos sobre suicidio consumado en el Estado de Guanajuato. In: Chávez Hernández, y Macías García, Ed (2003). El fenómeno del suicidio en el Estado de Guanajuato. *Ed. Universidad de Guanajuato*.

#### OTHER PUBLICATIONS

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- Anvari, V., Atapour, M., Bourouiba, L., Caudillo Mata, L. A., Collinson S., Johnson, A., Madras N., Miasnikof, P., Ramírez Ramírez, L.L., Sánchez-Bravo, I.. (To be publish online). Mathematical Models for Estimating the Risk of vCJD Transmission. Report of the modelling done during the *Math-in-Medicine Study Group*. *OCCAM-Fields-MITACS Biomedical Problems Solving Workshop*. June 22-26, 2009, Toronto. Canada.

#### AWARDS, GRANTS AND RECOGNITIONS

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- **September 2009** UW-Fields Postdoctoral Fellowship.
- **May 2009.** One-Term MITACS Accelerate Internship.
- **Spring 2008.** Math Graduate Experience Award.
- **2003-2007.** National Council for Science and Technology grant (CONACyT grant) for Ph.D. Program in foreign educational institutions.
- **2000.** Graduated from M. Sc. program with honours for highest GPS in class.
- **1997 and 1998.** CONACyT grant for Master Program of Excellence in Science and Technology.
- **1997.** Graduated from the B. Sc. Program with honours.

## SERVICES

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- **2006-2007.** Graduate student representative in the department of Statistics and Actuarial Science. *University of Waterloo.* Canada.
- **April-October 1996.** 480 hrs of Social Service. Project: Development of periodicity criteria in 2D billiards and program algorithm to visualize the ball trajectory in polygonal billiards. *Laboratory of Mathematical Objects Visualization.* Department on Mathematics. *Faculty of Science. UNAM.* Mexico.

## DEVELOPED FREEWARE PACKAGES

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- **2006.** R package: InfNet (to update).

## PRESENTATIONS

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- **October 23 , 2009.** Ramírez Ramírez, L. L. “The spread of diseases in networks”. Invited seminar talk at the Department of Mathematics and Statistics. University of Ottawa. Canada.
- **May 31<sup>st</sup> -June 3<sup>rd</sup>, 2009.** Ramírez Ramírez, L. L. and Thompson, M. E. “Effectiveness of control measures for diseases that spread in populations with contact network structure”. *Annual Meeting of the Statistical Society of Canada.* Vancouver, Canada.
- **April 22<sup>nd</sup> -25<sup>th</sup>, 2009.** Thompson, M. E. and Ramírez Ramírez, L. L. “Micro-simulation and epidemics”. *Conference on Statistics, Science and Public Policy: Energy, Food and Water.* Hailsham, U.K.
- **April 4<sup>th</sup>, 2009 .** Ramírez Ramírez, L. L. “Dynamics of infectious diseases in networks”. Invited talk to the joint Regional Quebec workshop of the Laboratory of Statistics at the Centre de recherches mathématiques (CRM) and the SSC New Investigators Committee, Montreal, Canada.
- **June 2008.** Ramírez Ramírez, L. L. and Thompson, M. E. “Outbreaks in Populations with Contact Network Structure”. *Joint Meeting of the Statistical Society of Canada and the Société Française de Statistique.* Ottawa, Canada.
- **June 28, 2007.** Ramírez Ramírez, L. L. and Thompson, M. E. “Sobre modelos estocásticos para brotes epidémicos en poblaciones no homogéneas” (“On Stochastic Models for Outbreaks in non-homogeneous populations”). *Seminar presentation.* CIMAT, Mexico.
- **June 25, 2007.** Ramírez Ramírez, L. L. and Thompson, M. E. “Sobre modelos estocásticos para brotes epidémicos en poblaciones no homogéneas”. *Seminar presentation.* University of Querétaro, Mexico.
- **June 2006.** Ramírez Ramírez, L. L. and Thompson, M. E. Poster Presentation: “InfNet: Simulation program for SIR-type epidemic models on contact networks”. *2006 CAIMS-MITACS Annual Conference / 2006 Summer School on Mathematical Modeling of Infectious Diseases.* York University, Canada.
- **May 23-27, 2006.** Martínez Hernández, A. C., Ramírez Ramírez, L. L. and Guevara Sanguinés, M. L. “El trabajo interdisciplinario en la investigación educativa”. *Segundo Congreso Internacional de Metodología de la Ciencia y de la Investigación para la Educación.* National Polytechnic Institute (IPN), Mexico.
- **December 7th, 2001.** Ramírez Ramírez, L. L., Macías García L. F. and Ortega, L. “Propuesta para el análisis estadístico de la migración internacional” (“A proposed statistical analysis for the study of the international migration”). *Permanent Seminary of International Migration.* College of the North Border (COLEF). Mexico.

- **September 13-15, 2000.** Ramírez Ramírez, L. L. “Inferencia a través de la verosimilitud” (“Statistical Inference Through Likelihood”). *Week of Applied Mathematics*. Autonomous University of Aguascalientes, Mexico.

#### CONTINUING EDUCATION

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- **May 28, September 17 and 18, 2009.** Workshops: a) Get the things done!, b) Business Conduct Excellence: Enhance Your Career Success!, c) Effective Networking, d) Practice your presentation skills!. *MITACS Skills Enhancement Program*. Ontario, Canada.

#### SOFTWARE AND LANGUAGES

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- Unix, Windows-Mac, Office packages, R, SAS, SPSS, C
- Spanish (first language), English (fluent), French (lecture)