

BAKEERATHAN GUNARATNAM, Ph.D.

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EDUCATION

Ph.D. Statistics	Case Western Reserve University (CWRU), OH	May 19, 2013
M.Phil. Statistics	Cardiff University, United Kingdom.	December 18, 2007
M.Sc. Applied Statistics	University of Peradeniya, Sri Lanka	October 18, 2003
B.Sc. Mathematics	University of Jaffna, Sri Lanka	April 19, 2000

Ph.D. DISSERTATION

Part A: Shock creation and dissolution in fractional conservation laws driven by Lévy stable and Linnik diffusions
Advisor: Wojbor Woyczynski

The main new insights that the Linnik diffusions produce shocks that do not dissipate over time come from our simulations and large-scale numerical schemes for Linnik conservation laws. Such shocks do dissipate in the case of alpha-stable diffusions. We formulate conjectures based on these numerical experiments.

Part B: Factors Affecting a Student's Decision to Enroll in the Law School, CWRU

Identify what are the factors affecting a student's decision to enroll in Case Western Reserve University Law school program and determine the predictors for the minimum amount of scholarship award that is needed to admit the best prospective students in the Law school program.

TEACHING EXPERIENCE

Assistant Professor, University of Louisville

July 2016 – To Date

Primary duties: Teaching biostatistics courses in graduate program, Developing courses and tools for certificate and MS programs. Additional duties: Collaborative research and active involvement in the statistical consulting center.

Postdoctoral Scholar, University of Louisville

July 2013- June 2016

Focused on clinical trials and health statistics articles to emphasize the interactions of biostatistics and everyday life. Responsible for all aspects of the courses: syllabus design, lesson delivery, and grading. Promptly return graded assignments to students and posted the solutions on the blackboard. [Courses: **Clinical Trials I & II, Biostatistical Methods (R), Probability, Biomedical Data Analysis and Design (SPSS/ MINITAB), Introduction to Statistical Computing (SAS), High-Throughput Data Analysis (Ridge Regression and LASSO)**]

Instructor, CWRU

June 2012 - August 2012

Continually assessed students ability levels during class quizzes and one-on-one interactions. Promptly returned graded assignments to students and posted the solutions on the blackboard. Promoted student's success by making myself available to students outside of classroom and office hours, through email, special appointments, and a review session before the final exam. [Course: **Basic Statistics for Social and Life Sciences**]

Teaching Assistant, CWRU

January 2008- May 2013

Conducted conferences with students for each major paper assignment to address individual goals and progress. Spent the time working practice problems at the board; worked around the room; talked with each student in turn; occasionally taught Statistics and Mathematics courses. [Courses: **Multivariate Data Analysis & Data Mining, Statistical Inference, Advance Theory of Statistics, Basic Statistics for Engineering and Science, Statistics for Signal Processing and Calculus**]

PUBLICATIONS

- B.Gunaratnam** and W.A. Woyczynski, 2016. Creation and Preservation of Shocks in Linnik Conservation Laws, “*Dynamics of Continuous, Discrete and Impulsive System*”, 23, 231-250
- D.Torres, J.Shiber, R.Pasic, S.Biscette, **B.Gunaratnam** and G.Lang, 2015 . Identifying the Rate-Limiting Step in Total Laparoscopic Hysterectomy in a training Hospital, “*The Journal of Minimally Invasive Gynecology*”, 22(6), 974-979.
- B.Gunaratnam** and W.A. Woyczynski, 2015. Multiscale Conservation Laws Driven by Lévy Stable and Linnik Diffusions: Asymptotics, Shock Creation, Preservation and Dissolution, “*Journal of Statistical Physics*”, vol 160(1), 29-59.
- T.E.Franklin, C.V.Salyer and **B.Gunaratnam**, 2015. Monthly Trends in Abortion Access and Care in Kentucky, “*Contraception*”, vol 91(5), pp 427-428.
- G.Bakeerathan** and N.Leonenko, 2008. Linnik Processes, “*Random Operators and Stochastic Equations*”, vol 16(3), pp 109-130.
- G.Bakeerathan** and S.Samita, 2003. A Non-Parametric Approach in Testing Higher Order Interactions, “*Sri Lankan Journal of Applied Statistics*”, vol 4, pp 15-25.
- B.Gunaratnam**, H.Haller and W.A. Woyczynski. Factors Affecting an Admitted Students Decision to Enroll in the Law School. (Under Review).

COLLABORATIVE RESEARCH

Department of Obstetrics, Gynecology and Women’s Health and School of Dentistry, University of Louisville

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| Influence of In-office Hygiene Instructions on the Parent’s Assessment of Their Child’s Oral Health | March 2015- To date |
| Factors Involved in Postpartum Long-Acting Reversible Contraception (LARC) Intended use versus Actual use. | May 2014– August 2014 |
| Seasonality of Abortion Incidence in Kentucky. | April 2014 - July 2014 |
| Identifying the Rate-Limiting Step in Total Laparoscopic Hysterectomy. | March 2014 - June 2014 |

CONFERENCE ACTIVITY

- Paper Presented:** *The 9th International Conference on Differential Equations and Dynamical Systems*
Creation and Preservation of Shocks in Linnik Conservation Laws May, 2015

VISITOR

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| Center for Stochastic and Chaotic Processes in Science and Technology, CWRU | May 2014- August 2014 |
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AWARDS AND SCHOLARSHIPS

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| Case Western Reserve University Graduate Fellowship | January 2008 - May 2013 |
| Jaffna University Mahapola Scholarship | August 1996 – May 2000 |

INTERNSHIP EXPERIENCE

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| Statistical Data Analyst, CWRU | September 2102 – November 2012 |
| Project: St. Bernard’s Hospital Department of Cardiac Surgery Data Analysis | |
| Statistical Data Analyst, CWRU | May 2011- August 2011 |
| Project: A Retrospective Study of the Use of Nielsen’s Local People Meter (LPM) in the Cleveland-Akron-Canton (CAC) Designated Marketing Area (DMA) | |

AFFILIATIONS

- Reviewer of the journal “Progress in Applied Mathematics”
Member of the American Statistical Association
Member of the Applied Statistical Association of Sri Lanka