

## **ALVARO NOSEDAL SÁNCHEZ**

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### **EDUCATION**

PhD, Statistics (with distinction)  
University of New Mexico, May 2011,  
Albuquerque, New Mexico.  
Thesis Advisor: PhD Curtis B. Storlie.  
GPA: 4.0/4.0

MS, Statistics  
University of New Mexico, December 2006,  
Albuquerque, New Mexico.  
GPA: 4.0/4.0

BS, Actuarial Sciences  
Universidad Nacional Autónoma de México, August 2000,  
DF, México.  
GPA: 9.54/10

### **RESEARCH INTERESTS**

Nonparametric Regression.  
Bayesian Statistics.  
Linear Models.  
Applications of Statistical Models.  
Gaussian Markov Random Fields.

### **AWARDS**

Susan Deese Roberts Outstanding Teaching Assistant of the Year Award (2006-2007).

### **EXPERIENCE AT UNIVERSITY OF TORONTO MISSISSAUGA**

Assistant Professor (Teaching Stream). November 2014 - present.  
Courses taught: Introduction to Applied Statistics, Statistics for Management, Probability and Statistics I, Probability and Statistics II, Topics in Statistics: Applications of Statistical Models, Applied Multivariate Statistics, Applied Time Series Analysis, Statistics with Applied Probability, Independent Study (Classification Methods in Statistics and Computer Science. Theory and Applications).

### **EXPERIENCE AT UNIVERSITY OF NEW MEXICO**

Postdoctoral Fellow. Spring 2013 - October 2014.  
The Problem of Bias in Defining Uncertainty in Computationally Enabled Strategies for Climate Models.  
Mentor: Dr. Gabriel Huerta

Instructor. Fall 2013.  
Course taught: Introduction to Statistics.

## **EXPERIENCE AT INDIANA UNIVERSITY**

Postdoctoral Fellow. Spring 2012 - Spring 2013.

The Problem of Bias in Defining Uncertainty in Computationally Enabled Strategies for Climate Models.

Mentor: Dr. Gabriel Huerta

## **EXPERIENCE AT INDIANA UNIVERSITY OF PENNSYLVANIA**

Assistant Professor. Spring 2011 - Fall 2012.

Courses taught: Applied Statistical Methods (graduate level course).

Probability and Statistics for Business Majors (undergraduate level course).

## **EXPERIENCE AT UNIVERSITY OF NEW MEXICO**

Statistics Clinic. Spring 2009 - Summer 2010.

Teaching assistant. Spring 2005 - Fall 2008.

Courses taught: Introduction to Probability for Engineers and Computer Scientists, Introduction to Statistics, College Algebra.

## **SERVICE**

Project proposal reviewer (Statistics), Research Opportunity Program, University of Toronto Mississauga, Winter 2017.

Statistics Faculty Advisor, Summer 2016 - Present.

Referee, Journal of the Royal Society of Statistics. Fall 2012 - Present.

Referee, The American Statistician. Fall 2011 - Present.

Abstract reviewer, Graduate and undergraduate submissions for SACNAS National Conference, Fall 2013.

Judge, Undergraduate posters at SACNAS National Conference, Fall 2012.

Judge, Graduate and undergraduate posters at SACNAS National Conference, Fall 2011.

Member of the Statistics Committee, Indiana University of Pennsylvania. Spring 2011 - Fall 2011.

Member of the Colloquium Committee, Indiana University of Pennsylvania. Spring 2011 - Fall 2011.

Vice President of the Graduate Student Association of students in Mathematics and Statistics. Spring 2009 - Fall 2009.

Secretary of the Graduate Student Association of students in Mathematics and Statistics. Fall, Spring and Summer 2008.

## **COMPUTER EXPERIENCE**

Experience with R, Winbugs, SAS, Minitab, SPSS, Matlab, Latex, HTML and Microsoft Office.

## PAPERS ACCEPTED FOR PUBLICATION

A new test statistic for climate models that includes field and spatial dependencies using Gaussian Markov Random Fields. Alvaro Nosedal, Charles Jackson, and Gabriel Huerta (Geoscientific Model Development, 2016).

Non-parametric Sampling Approximation via Voronoi Tessellations. Alejandro Villagran, Gabriel Huerta, Marina Vannucci, Charles Jackson and Alvaro Nosedal (Communications in Statistics, 2015).

An efficient algorithm for smoothing airspace congestion by fine tuning take-off times. Jenaro Nosedal, Miguel Angel Piera, Sergio Ruiz and Alvaro Nosedal (Transportation Research Part C, 2014).

Reproducing Kernel Hilbert Spaces for Penalized Regression: A tutorial. Alvaro Nosedal, Curtis B. Storlie, Thomas C. M. Lee and Ronald R. Christensen (The American Statistician, 2012).

## PAPERS IN PREPARATION

Flexible Smoothing via the Locally Adaptive Component Selection and Shrinkage Operator (LACOSSO). Alvaro Nosedal and Curtis B. Storlie.

A Bayesian Approach to the Problem of Estimating Species Abundance from Occurrence. Alvaro Nosedal and Gabriel Huerta.

Gaussian Markov Random Fields: A tutorial. Alvaro Nosedal, Gabriel Huerta, and Charles Jackson.

Empirical Processes: A tutorial. Alvaro Nosedal, Gabriel Huerta, Curt B. Storlie, Ronald R. Christensen and Edward Bedrick.

## PRESENTATIONS

Introduction to Statistics using R Software. Workshop. University of Toronto, Mississauga, Canada, March 2017.

P.A.R.T. Data Analysis Workshop. University of Toronto, Mississauga, Canada, January 2017.

$R^3$ : Reproducible Research with R. Workshop. International Conference on Technology and its Integration in Mathematics Education. National Autonomous University of Mexico, Mexico City, Mexico, July 2016.

P.A.R.T. Data Management Workshop. University of Toronto, Mississauga, Canada, Winter 2016.

A gentle introduction to Hypothesis Tests. Head Start. University of Toronto, Mississauga, Canada, Fall 2016.

Sampling Distributions and Inference for Proportions. Fall Campus Day. University of Toronto, Mississauga, Canada, Fall 2016.

A new metric for climate models that includes spatial and field dependencies. University of Nevada at Reno, Reno, Nevada, Summer 2014.

Sampling Distributions. University of Toronto, Mississauga, Canada, Spring 2014.

Introduction to Bayesian Statistics. University of Toronto, Mississauga, Canada, Spring 2014.

Assessing High-Dimensional Space and Field Dependencies between Modeled and Observed Climate Data. SIAM Conference on Uncertainty Quantification, Savannah, Georgia, Spring 2014.

Reproducing Kernel Hilbert Spaces for Penalized Regression: A tutorial. SACNAS National Conference, San Jose, California, Fall 2011.

Adaptive Weighting for Flexible Estimation in Nonparametric Regression Models.

Department of Mathematics and Statistics, University of New Mexico, Spring 2011.

Reproducing Kernel Hilbert Spaces for Penalized Regression: A tutorial. Indiana University of Pennsylvania, Spring 2011.

Adaptive Weighting for Flexible Estimation in Nonparametric Regression Models. Methodology Center, Penn State, Summer 2010.

Adaptive Weighting for Flexible Estimation in Nonparametric Regression Models. Indiana University of Pennsylvania, Spring 2010.

## **GRANTS**

Indiana University of Pennsylvania Research Committee, Small Grants Program. Funding secured to travel and present at the 2011 SACNAS National Conference in San Jose, California, Fall 2011.

## **MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

Member of the American Statistical Association (ASA).

Member of the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS).

Member of the Society for Industrial and Applied Mathematics (SIAM)

## **REFERENCES**

PhD. Curtis B. Storlie  
Technical Staff  
Computer Computational and Statistical Sciences  
Statistical Science Group  
MSF600  
Los Alamos National Laboratory  
Los Alamos, NM 87545  
Phone: 505 709-0168  
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PhD. Ronald R. Christensen  
Professor  
Department of Mathematics and Statistics  
University of New Mexico  
Albuquerque, NM 87131  
Office: 304 SMLC  
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PhD. Gabriel Huerta  
Professor  
Department of Mathematics and Statistics  
University of New Mexico  
Albuquerque, NM 87131  
Office: 314 SMLC  
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PhD. Charles S. Jackson  
Research Scientist  
Institute for Geophysics  
The Jackson School of Geosciences  
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PhD. Edward Bedrick  
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Epidemiology and Biostatistics Department  
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