

# Nicolás García Trillos

## CONTACT DETAILS

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## EMPLOYMENT

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**Assistant Professor**  
*Department of Statistics, University of Wisconsin-Madison*

August 2018-

**Prager Assistant Professor**  
*Division of Applied Mathematics, Brown University*

July 2015-  
June 2018

## EDUCATION

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**PhD, Mathematical Sciences**  
*Carnegie Mellon University*

2010-2015

Thesis: “Variational Limits of Graph Cuts on Point Clouds.” Adviser: Dejan Slepčev.

**MSc, Mathematical Sciences**  
*Carnegie Mellon University*

2010-2012

**BSc, Mathematics**  
*Universidad de los Andes, Bogotá, Colombia*  
Cum Laude.

2005-2010

## PUBLICATIONS

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N. García Trillos, B. Hosseini, F. Hoffmann *Geometric structure of graph Laplacian embeddings.* (In preparation)

N. García Trillos, R. Murray, D. Sanz-Alonso. *Spatial extreme values via variational techniques.* Preprint 2018.

N. García Trillos, M. Gerlach, M. Hein and D. Slepčev. *Error estimates for spectral convergence of the graph Laplacian on random geometric graphs towards the Laplace–Beltrami operator.* Preprint 2018.

N. García Trillos, Z. Kaplan, T. Samakhoana, D. Sanz-Alonso. *On the Consistency of Graph-based Bayesian Learning and the Scalability of Sampling Algorithms.* Preprint 2017

N. García Trillos and Daniel Sanz-Alonso. *Continuum Limit of Posteriors in Graph Bayesian Inverse Problems.* To appear in *SIMA* 2017

N. García Trillos and Daniel Sanz-Alonso. *The Bayesian update: variational formulations and gradient flows.* To appear in *Bayesian Analysis* 2017

N. García Trillos. *Gromov-Hausdorff limit of Wasserstein spaces on point clouds.* Preprint 2017

N. García Trillos, D. Slepčev and J. von Brecht. *Estimating Perimeter Using Graph Cuts.* Ad-

*vances in Applied Probability. 2017*

N. García Trillos and Ryan Murray. *A New Analytical Approach to Consistency and Overfitting in Regularized Empirical Risk Minimization. EJAM . 2017*

A.Ramdas, N. García Trillos, M.Cuturi *On Wasserstein Two-Sample Testing and Related Families of Nonparametric Tests. Entropy 2017*

N. García Trillos and Daniel Sanz-Alonso *The Bayesian Formulation and Well-Posedness of Fractional Elliptic Inverse Problems. Inverse problems. 2017*

N. García Trillos. *Variational limits of k-NN graph based functionals on data clouds. To appear in SIMODS. 2018*

X. Bresson, N. García Trillos, T. Laurent, D. Slepčev and J. von Brecht. *Consistency of Cheeger and ratio graph cuts. Journal of Machine Learning Research. 2016*

N. García Trillos and D. Slepčev. *A variational approach to the consistency of spectral clustering. Applied and Computational Harmonic Analysis. 2016*

N. García Trillos and D. Slepčev. *Continuum limit of total variation on point clouds. Archive for Rational Mechanics and Analysis. 2015*

N. García Trillos and D. Slepčev. *On the rate of convergence of empirical measures in  $\infty$ -transportation distance. Canadian Journal of Mathematics. 2015*

## **AWARDS**

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-Aranda-Ordaz Award 2016 sponsored by the Bernoulli Society. “Bestowed for one thesis in Probability and one thesis in Statistics written by students from Latin America, regardless of the country of the university offering the degree, or by students from other nationalities who received the degree from a Latin American university.”

## **MOST RECENT SEMINAR AND CONFERENCE TALKS**

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-Workshop on Optimal transportation and its applications, Centro de Giorgi, Scuola Normale Superiore, Pisa, Italy, November 2018.

-Ki-Net Young researchers workshop, University of Maryland, College Park, October 2018

-Data Science Seminar, University of Minnesota, October 2018.

-Applied probability and risk seminar. Columbia University, October 2018.

-Mathematics Colloquium, Universidad de Los Andes, August 2018 .

-Primer congreso colombiano de matemáticas aplicadas, Bogotá, August 2018.

-Fractional PDEs: Theory, algorithms and applications workshop, ICERM , June 2018.