Curriculum Vitae
Nestor Guillen

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Personal information

Born: September 25, 1984.
Citizenship: Venezuelan.

Education

Ph.D. Mathematics — December 2010
University of Texas at Austin.
Advisor: Luis Caffarelli.

Licenciado en Matemáticas — July 2006
Universidad Simón Bolívar. Sartenejas, Venezuela.
Tutor: Lázaro Recht.

Positions

Asisstant Professor.
University of Massachusetts at Amherst. — July 2014- Present.

E.R. Hedrick Assistant Adjunct Professor.
University of California at Los Angeles. — July 2011- July 2014.

Postdoctoral Fellow.
Mathematical Sciences Research Institute, Berkeley. — Spring 2011.

Visiting Scholar.
Institute for Advanced Study, Princeton. — Winter 2009.

Graduate Research Assistant.
University of Texas at Austin. — Spring 2007-Fall 2010.

Fellowships, grants and awards

Visiting Researcher at the *Fields Institute* in Toronto, Canada.	Fall 2014.
NSF Research Grant DMS-1201413. Award: $\$102,000.00$	2012-2016.
Graduate School Continuing Fellowship.	2009-2010.
Lefevre Fellowship.	Spring 2009.
Wall Memorial Fellowship.	Spring 2009.
Frank Sid Richardson Foundation Regents Fellowship.	Spring 2007.
Frank Gerth III Graduate Excellence Award.	2007.

Ph.D. Students

- Michael Boratko (co-supervised with Andrea Nahmod), expected graduation: May '18.

Research articles

1. *Min-max formulas for nonlocal elliptic operators.* N. Guillen and R. Schwab. Submitted
2. *From the free boundary condition for Hele-Shaw to a fractional parabolic equation.* N. Guillen and H. Chang-Lara. Submitted.
3. *Neumann Homogenization via Integro-Differential Operators, Part 2: singular gradient dependence.* N. Guillen and R. Schwab. Submitted.
4. *Estimates for radial solutions of the homogeneous Landau equation with Coulomb potential.* M. Gualdani and N. Guillen. *Analysis and PDE* (2016) Vol. 9 8:1772.
5. *Pointwise estimates and regularity in geometric optics and other Generated Jacobian Equations.* N. Guillen and J. Kitagawa. *Communications on Pure and Applied Mathematics.* Accepted for publication.
6. *Neumann Homogenization via Integro-Differential Operators.* N. Guillen and R. Schwab. *Discrete and Continuous Dynamical Systems* (2016) 36:3677.
7. *Mean curvature, diffusion generated motion, and phase field theory on finite graphs.* A. Bertozzi, Y. van Gennip, N. Guillen and Braxton Osting. *Milan Journal of Mathematics* (2014) 82:3.
8. *Quasistatic droplets in randomly perforated domains.* N. Guillen and Inwon Kim. *Archive for Rational Mechanics and Analysis* (2015) 215:211.
9. *On the local geometry of maps with c-convex potentials.* N. Guillen and J. Kitagawa. *Calculus of Variations and Partial Differential Equations* (2015) 52:345.
10. *Aleksandrov-Bakelman-Pucci Type Estimates For Integro-Differential Equations.* N. Guillen and R. Schwab. *Archive for Rational Mechanics and Analysis* (2012) 206:111.
11. *Five lectures on optimal transportation: geometry, regularity and applications.* N. Guillen and R. McCann. *In Analysis and Geometry of Metric Measure Spaces*: Lecture Notes of the Seminaire de Mathematiques Superieure (SMS). Montreal 2011. Amer. Math. Soc. (2013) 145-180.
12. *Regularity for non-local almost minimal boundaries and applications.* N. Guillen and C. Caputo. Unpublished manuscript.
13. *Optimal regularity for the Signorini problem.* N. Guillen. *Calculus of Variations and Partial Differential Equations* (2009) 36:533.

Talks at university seminars

- Analysis seminar. Massachusetts Institute of Technology, March 2017, Boston.
- Analysis and PDE Seminar. Johns Hopkins University. November 2016, Baltimore.
- Analysis Seminar. University of Chicago. October 2016, Chicago.
- Applied Mathematics Seminar. Michigan State University. March 2016, Lansing.
- Geometric PDE. University of Wisconsin. March 2016, Madison.
- PDE Seminar. Georgia Inst. of Technology, October 2015, Atlanta.
- UCLA-Caltech Analysis Seminar. California Inst. of Technology, May 2015, Pasadena.
- PDE Seminar. Brown University, January 2015, Providence.
- Applied Mathematics Seminar. Michigan State University, December 2014, Lansing.
- PDE Seminar. McMaster University, October 2014, Hamilton.
- Members Seminar. Fields Institute, October 2014, Toronto.
- Analysis Seminar. Columbia University, September 2014, New York.

- Colloquium. Drexel University, January 2014, Philadelphia.
- Colloquium. George Washington University. January 2014, Washington, D.C.
- Colloquium. University of Maryland. December 2013, College Park.
- Colloquium. University of Massachusetts. December 2013, Amherst.
- Colloquium. Purdue University. December 2013, West Lafayette.
- UCLA-Caltech Analysis Seminar. California Inst. of Technology, November 2013. Pasadena.
- Analysis seminar. George Washington University. September 2013. Washington, DC.
- Geometric PDE seminar. Princeton University. September 2013. Princeton.
- Analysis and PDE seminar. University of Maryland. September 2013. College Park.
- Applied Mathematics seminar. Michigan State University. September 2013. Lansing.
- PDE seminar. Courant Institute, NYU. May 2013, New York.
- Analysis seminar. UCLA. May 2013, Los Angeles.
- Analysis seminar. UT Austin. March 2013, Austin.
- Probability seminar. UCLA. January 2013, Los Angeles.
- Joint PDE and Probability seminar. USC. January 2013, Los Angeles.
- Geometric PDE seminar. University of Wisconsin. March 2012, Madison.
- Analysis seminar. California Inst. of Technology. March 2012, Pasadena.
- PDE seminar. UC Irvine. February 2012, Irvine.
- Analysis and PDE seminar. UCLA. October 2011, Los Angeles.
- Geometry seminar. Stanford University. May 2011, Stanford.
- PDE seminar. UC Berkeley. March 2011, Berkeley.
- Free boundaries seminar. MSRI. February 2011, Berkeley.
- Analysis and PDE seminar. UCLA. January 2011, Los Angeles.
- Analysis seminar. University of Chicago. January 2011, Chicago.
- Geometric PDE. Princeton University. April 2010, Princeton.
- PDE seminar. Brown University. April 2010, Providence.
- CNA seminar. Carnegie Mellon University. April 2010, Pittsburgh.

Minicourses taught

- Minicourse on Stochastic Homogenization. 2016 Gene Golub Summer School, Philadelphia, July 2016.

Conference talks

- Forthcoming: *Mathematical Congress of the Americas.* Session on Nonlocal variational problems. Montreal. July 2017.
- *AMS Sectional Meeting.* New York. April 2017.
- *AMS Sectional Meeting.* Minneapolis. October 2016.
- *SIAM Conference on Nonlinear Waves and Coherent Structures.* Session on Nonlocal dynamics in mechanics, transport, and electromagnetics. Philadelphia. August 2016.
- *3rd Conference on Nonlocal Operators and Partial Differential Equations.* Stefan Banach International Mathematical Center, Bedlewo. June 2016.

- *Conference on Recent Trends on Elliptic Nonlocal Equations.* Fields Institute, Toronto. June 2016
- *AMS Sectional Meeting.* Fullerton. October 2015.
- *AMS Sectional Meeting.* Chicago. October 2015.
- *SIAM PDE Conference.* Session: *Traveling waves in random media.* Orlando. December 2013.
- *2013 AMS Sectional Meeting.* Session *Special Session on Homogenization of Partial Differential Equations.* October 2013.
- *9th AIMS Conference on Dynamical Systems and Applications.* Orlando. July 2012.
- *Nonlocal PDEs Workshop.* IPAM, Los Angeles. February 2012.
- *2011 AMS Sectional Meeting.* Session: *Special Session on Topics in Partial Differential Equations and Geometric Analysis.* April 2011.

Other

- Referee for various academic journals.
- SIAM Conference on Analysis of PDE 2009. *Topics in fractional and geometric PDE* (co-organized with Luis Caffarelli).
- SIAM Conference on Analysis of PDE 2011. Co-organizer. *Non-local equations: perspectives from Probability and PDEs* (co-organized with Russell Schwab).
- Optimal Transport School, Lake Arrowhead (October 2013). Co-organized with Dima Shlyakhtenko and Christoph Thiele.
- Generated Jacobian Equations: from Geometric Optics to Economics. Workshop to take place in April 2017 at the Banff International Research Station (co-organized with J. Kitagawa and R. McCann).