

JAMES P. LEE-THORP, PhD

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ACADEMIC PROFESSIONAL EXPERIENCE

New York University, Courant Institute of Mathematical Sciences, New York, NY
Courant Instructor (Assistant Professor) / Postdoctoral Associate Sept. 2016 – Present

- Advisors: Robert V. Kohn and Miranda C. Holmes-Cerfon

Columbia University, Department of Applied Physics and Applied Mathematics, New York, NY
Postdoctoral Research Scientist June – Aug. 2016

- Advisor: Michael I. Weinstein

EDUCATION

Columbia University, Graduate School of Arts and Sciences, New York, NY
PhD in Applied Mathematics May 2016

- Advisor: Michael I. Weinstein
- Dissertation: “[Bifurcation perspective on topologically protected and non-protected states in continuous systems](#)”
- Awarded [APAM Simon Prize](#) – awarded annually by the Applied Physics and Applied Math department to the graduate student who has completed the most outstanding dissertation

MPhil in Applied Mathematics Aug. 2015

MS in Applied Mathematics May 2012

University of Cape Town, Department of Mathematics and Applied Mathematics, Cape Town, South Africa
MS in Applied Mathematics Dec. 2012

- Advisor: Igor V. Barashenkov
- Thesis: “[Spectral continuation study of the temporally periodic solitons of the damped-driven nonlinear Schrödinger equation](#)”
- Awarded [S2A3 Masters Medal](#) from the Southern African Association for the Advancement of Science – awarded annually to one candidate for the best MS thesis in the sciences across the university

BS Honors in Applied Mathematics Dec. 2010

BS in Applied Mathematics and Physics Dec. 2009

PUBLICATIONS

- “[Honeycomb Schroedinger operators in the strong binding regime](#)” (with C. L. Fefferman and M. I. Weinstein), to appear in *Comm. Pure Appl. Math.* (arXiv:1610.04930)
- “[Bifurcations of edge states – topologically protected and non-protected – in continuous 2D honeycomb structures](#)” (with C. L. Fefferman and M. I. Weinstein), *2D Materials* **3** (2016): 014008
- “[Edge states in honeycomb structures](#)” (with C. L. Fefferman and M. I. Weinstein), to appear in *Annals of PDE* (arXiv:1506.06111)
- “[Photonic realization of topologically protected bound states in domain-wall waveguide arrays](#)” (with I. Vukićević, J. Yang, X. Xu, C. L. Fefferman, C. W. Wong and M. I. Weinstein), *Phys. Rev. A* **93** (2016): 033822
- “[Topologically protected states in one-dimensional systems](#)” (with C. L. Fefferman and M. I. Weinstein), *Memoirs of AMS* **247** (2017)
- “[Topologically protected states in one-dimensional continuous systems and Dirac points](#)” (with C. L.

CONFERENCE PAPERS

- [Observation of highly robust phase-defect induced photonic states](#) (with Y. Poo, Y. Tan, R. Wu, M. I. Weinstein and Z. Yu), Conference on Lasers and Electro-Optics (CLEO) (2016)
- [Photonic realization of topologically protected bound states in domain-wall waveguide arrays](#) (with I. Vukićević, J. Yang, X. Xu, C. L. Fefferman, C. W. Wong and M. I. Weinstein) Conference on Lasers and Electro-Optics (CLEO) (2016)

RECENT INVITED TALKS

- New York University, Courant Institute of Mathematical Sciences, New York, NY, September 2016
- SIAM Conference on Nonlinear Waves and Coherent Structures, Philadelphia, PA, August 2016
- SIAM Annual Meeting, Boston, MA, July 2016
- Rensselaer Polytechnic Institute (RPI), Department of Mathematical Sciences, Troy, NY, March 2016
- Columbia University, Department of Applied Physics and Applied Mathematics, New York, NY, February 2016
- Brown University, Mathematics Department, Providence, RI, February 2016
- SIAM Conference on Analysis of Partial Differential Equations, Scottsdale, AZ, December 2015
- Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, Athens, GA, April 2015

TEACHING EXPERIENCE

Columbia University, Department of Applied Physics and Applied Mathematics, New York, NY

Teaching Assistant

Sept. 2011 – May 2013

- [Introduction to Numerical Methods](#) (Spring 2013)
- [Introduction to Numerical Methods](#) (Spring 2012)
- [Partial Differential Equations](#) (Fall 2011)

InTuition OutReach (intuitiontutors.co.za/?page_id=48), Cape Town, South Africa

Project Supervisor and Tutor

Jan. – Dec. 2010

- Co-organized and tutored for a community outreach program offering weekly mathematics workshops to high school students in Samora Machel (low-income neighborhood)

SELECTED PROFESSIONAL EXPERIENCE

SiteCompli (sitecompli.com), New York, NY

Data Science Intern

June – Aug. 2014

- Developed a proof of concept project, the core of which consisted of a MySQL/Python feature fetching pipeline and a predictive model built with scikit-learn (Python machine learning library)

InTuition Home Tutorials (intuitiontutors.co.za), Cape Town, South Africa

Manager (currently serving in an advisory role)

Jan. 2008 – Dec. 2012

- Co-founded a small private tuition company providing university and high school tuition
- Recruited and managed tutors, liaised directly with clients and oversaw month-end finances
- A particular highlight was partnering with the University of Cape Town based Student Health And Welfare Community Organization (SHAWCO) to run tutor training workshops for over five hundred volunteers