

CURRICULUM VITAE

YAIZA CANZANI

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EDUCATION

DEGREE	Ph.D. in Mathematics	
INSTITUTION	McGill University	Montreal, Canada
PERIOD	September 2008 — April 2013	
DEGREE	Bachelor in Mathematics	
INSTITUTION	Universidad de la República	Montevideo, Uruguay
PERIOD	March 2005 — July 2008	

ACADEMIC EMPLOYMENT

PERIOD	July 2016 — Present	
JOB TITLE	Assistant Professor	
INSTITUTION	University of North Carolina at Chapel Hill	NC, United States
PERIOD	July 2013 — June 2016	
JOB TITLE	Benjamin Peirce Fellow	
INSTITUTION	Harvard University	MA, United States
PERIOD	July 2014 — June 2015	
JOB TITLE	Member	
INSTITUTION	Institute for Advanced Study	NJ, United States
PERIOD	September 2008 — April 2013	
JOB TITLE	Research Assistant	
INSTITUTION	McGill University	QC, Canada

AWARDS & FELLOWSHIPS

- NSF CAREER Grant DMS-2045494 (recommended for funding) 2021-2026
- NSF Grant DMS-1900519 2019-2022

- Sloan Research Fellowship 2018–2020
- UNC Junior Faculty Award 2018–2019
- NSERC Postdoctoral Fellowship 2014–2016
- Benjamin Peirce Fellowship 2013–2016
- Research Associate of Sistema Nacional de Investigadores de Uruguay 2013-present
- Alexis D. and W. Charles Pelletier prize in Mathematics 2013
- Graduate Excellence Fellowship 2012-2013
- ISM Scholarship 2012-2013
- Schulich Graduate Fellowship 2010-2012
- Trottier Accelerator Fellowship 2008-2009

PUBLICATIONS

1. Y. Canzani and J. Galkowski. *Weyl remainders: an application of geodesic beams*. 2020. Submitted for publication. Preprint arXiv:2010.03969. 57 pages.
2. G. Berkolaiko, Y. Canzani, G. Cox, and J. Marzuola. *A local test for global extrema in the dispersion relation of a periodic graph*. Submitted for publication. 2020. Preprint arXiv:2004.12931. 29 pages.
3. Y. Canzani and J. Galkowski. *Growth of high L^p norms for eigenfunctions: an application of geodesic beams*. Submitted for publication. 2020. Preprint arXiv:2003.04597. 52 pages.
4. Y. Canzani and B. Hanin. *Local Universality for zeros and critical points of monochromatic random waves*. 2020. Communications in Mathematical Physics, pp.1-36.
5. T. Beck, Y. Canzani and J. Marzuola. *Nodal line estimates for the second Dirichlet eigenfunction* 2019. To appear in Journal of Spectral Theory. Preprint arXiv:1904.11557. 18 pages.
6. Y. Canzani, L. Chen, D. Jakobson (Editors.) *Probabilistic Methods in Geometry, Topology and Spectral Theory*. 2019. (Vol. 739). American Mathematical Society.
7. Y. Canzani and J. Galkowski. *Improvements for Eigenfunction Averages: An application of geodesic beams*. 2019. Submitted for publication. Preprint arXiv:1809.06296. 58 pages.
8. Y. Canzani and J. Galkowski. *Eigenfunction concentration via geodesic beams*. 2019. To appear in Journal für die reine und angewandte Mathematik. Preprint arXiv:1903.08461. 57 pages.
9. Y. Canzani. *Monochromatic random waves for general Riemannian manifolds*. 2019. To appear in Frontiers in Analysis and Probability. Springer.
10. Y. Canzani and J. Galkowski. *On the growth of eigenfunction averages: microlocalization and geometry*. 2019. Duke Journal of Mathematics. 168(16), pp 2991–3055.

11. Y. Canzani and P. Sarnak. *Topology and nesting of the zero set components of monochromatic random waves*. 2019. Communications on Pure and Applied Mathematics. Volume 72 , no. 2, 343–374.
12. Y. Canzani and J.Toth. *Intersection bounds for nodal sets of Laplace eigenfunctions on compact surfaces*. 2018. Algebraic and Analytic Microlocal Analysis: AAMA, Evanston, Illinois, USA, 2012 and 2013 (Vol. 269). Springer. pp 421 – 436.
13. Y. Canzani. *Spectral geometry*. 2018. Contemporary Mathematics; American Mathematical Society. Volume 720. pp 153–186.
14. Y. Canzani and B. Hanin. *C^∞ - Scaling asymptotics for the spectral function of the laplacian*. Journal of Geometric Analysis. 2018. Volume 28, Issue 1, pp 111–122.
15. Y. Canzani, J. Galkowski and J. Toth. *Averages of eigenfunctions over hypersurfaces*. 2018. Communications in Mathematical Physics. 360(2):619–637.
16. Y. Canzani and J.Toth. *Nodal sets of Schrödinger eigenfunctions in forbidden regions*. Annales Henri Poincaré. 2016. Volume 17, Issue 11, pp 3063–3087.
17. Y. Canzani and B. Hanin. *Scaling limit for the kernel of the spectral projector and remainder estimates in the pointwise Weyl Law*. Analysis and Partial Differential Equations. 2015. Volume 8. Number 7, pp 1707-1731.
18. Y. Canzani and B. Hanin. *High frequency eigenfunction immersions and supremum norms of random waves*. Electronic Research Announcements in Mathematical Sciences. 2015. Volume 22, pp. 76-86.
19. Y. Canzani, D. Jakobson and L. Silberman. *Appendix of: Gaussian measures on the of space of Riemannian metrics*. Annales mathématiques du Québec. 2015. pp 1–17.
20. Y. Canzani, D. Jakobson, J. Toth. *On the distribution of perturbations of propagated Schrödinger eigenfunctions*. Journal of Spectral Theory. 2014. Volume 4, Issue 2, pp 307–328.
21. Y. Canzani. *On the multiplicity of eigenvalues of conformally covariant operators*. Annales de L'Institut Fourier. 2014. Volume 64, Number 3, pp 947–970.
22. Y. Canzani, D. Jakobson, R. Gover and R. Ponge. *Conformal invariants from nodal sets I. Negative eigenvalues and curvature prescription*. International Mathematical Research Notices. Volume 2014, Issue 9, pp 2356-2400.
23. Y. Canzani, D. Jakobson and I. Wigman. *Scalar curvature and Q-curvature of random metrics*. The Journal of Geometric Analysis. 2014. Volume 24, Issue 4, pp 1982-2019.
24. Y. Canzani, D. Jakobson, R. Gover and R. Ponge. *Nullspaces of conformally invariant operators. Applications to Q_k -curvature*. Electronic Research Announcements in Mathematical Sciences. 2013. Volume 20, pp. 43-50.

RESEARCH SUPERVISION

- Doctoral dissertation advising of Madelyne Brown. Spring 2020 – present
- Doctoral dissertation advising of Blake Keeler. Fall 2017 – present
- Supervising research (w/J. Marzuola) of a working group with students Dmitro Golovanich and Blake Keeler. Jan 2018- April 2019
- Co-supervisor of Matthew de Courcy-Ireland during his summer project. Summer 2012
- Co-supervisor of Steven Pollack during his summer project. Summer 2012

INVITED TALKS

- **Invited Address: Southeastern Sectional Meeting of the AMS** Georgia Institute of Technology, in Atlanta, GA. March 13–14, 2021
- Analysis Seminar at Princeton University (virtual meeting). March 8, 2021
- Analysis Seminar at Stanford University (virtual meeting). March 12, 2021
- **Colloquium at Brown University** (virtual meeting). October 28, 2020
- Conference on Random Nodal Domains. Rennes, France. (cancelled due to pandemic) Sept 7–11, 2020
- Dima Jakobson's 50th birthday. CRM (virtual meeting). Aug 24, 2020
- **Latinoamerican Congress of Mathematicians (CLAM).** *Invited to teach a mini-course* (postponed due to pandemic) July 20–24, 2020
- Monza Seminar (virtual seminar). MIT. May 20, 2020
- Spectral geometry in the clouds (virtual seminar). Université Laval and University College London. May 18, 2020
- Conference on Microlocal analysis and PDEs. UCL, London. (cancelled due to pandemic) April 29–May 1, 2020
- **Microlocal Analysis and Spectral Theory: A Conference in Honor of Richard Melrose** Oct 19-20, 2019
- **Summer school on semiclassical analysis.** Chicago, USA. *Taught a mini-course titled "Eigenfunction asymptotics".* July 29-Aug 16, 2019
- Conference on Microlocal Analysis and Applications. Shanghai, China. June 17-21, 2019
- Conference on Microlocal Methods in Analysis and Geometry. Luminy, France. May 6-10, 2019
- **Colloquium at University of Michigan at Ann Arbor.** Michigan, USA . March 26, 2019

- Differential Geometry Seminar at Harvard University. Boston, USA. March 12, 2019
- Differential Geometry Seminar at University of Chicago. Chicago, USA. March 5, 2019
- Analysis Seminar at North Carolina State University. Raleigh, USA. Nov 7, 2018
- **Main speaker: Texas Analysis and Mathematical Physics Symposium.** Baylor, USA Oct 26-28, 2018
- Workshop on “Groups, Geometry and Dynamics”. Montevideo, Uruguay. July 23-27, 2018
- Workshop “Around Quantum chaos”. Banff, Canada. July 15-20, 2018
- Workshop on “Spectral Geometry: Theory, Numerical Analysis. and Applications”. Banff, Canada. July 1-6, 2018
- Workshop “Random Waves in Oxford”. Oxford, England. June 18-22, 2018
- Workshop on “Microlocal Analysis and its Applications in Spectral Theory, Dynamical Systems, Inverse Problems and PDE”. Batemans Bay, Australia. March 18-23, 2018
- Analysis Seminar at Texas A&M. Texas, USA Feb 9, 2018
- Spectral geometry, graphs and semiclassical analysis. Aussois, France. Dec, 11-15, 2017
- **Riemannian Geometry Past, Present and Future:an homage to Marcel Berger** Paris, France. Dec, 6-9, 2017
- Workshop on Random geometries / Random topologies at ETH. Zurich, Switzerland. Dec 4-5, 2017
- AMS Sectional meeting. Orlando, USA. Sep 23-24, 2017
- Symposium on Scattering and Spectral Theory. Florianopolis, Brasil. July 17-28, 2017
- AMS Sectional meeting. Pullman, USA. April 21-23, 2017
- **Colloquium at Princeton University.** Princeton, USA April 12, 2017
- Workshop on Random Polynomials. Montevideo, Uruguay Feb, 2017
- Conference on Geometric and Spectral Methods in Partial Differential Equations. BIRS. Oaxaca, Mexico. Dec 11- 16, 2016
- AMS Sectional Meeting Program. Raleigh, USA Nov 12-13, 2016
- **CRM summer school of mathematics.** Quebec City, Canada July 4-14, 2016
Taught a mini-course tilted “Introduction to Spectral Geometry”.
- Conference on Dirichlet-to-Neumann Maps: Spectral Theory, Inverse Problems and Applications. BIRS. Oaxaca, Mexico. May 29- June 3
- Conference on Random Waves. Kings College University. London, England May 3-5, 2016.
- **Colloquium at Tufts University.** April 22, 2016.

- **Colloquium at University of Illinois at Urbana-Champaign.** Champaign, USA April 14, 2016.
- CMS Winter meeting. Montreal, Canada Dec, 2015.
- Summer School on Geometric and computational Spectral Theory. CRM. Montreal, Canada June 15-26, 2015.
- Conference on Quantum Geometry, Stochastic Geometry, Random Geometry, you name it. Simons Center. Stony Brook, USA . June 15-19, 2015
- May Midwestern Microlocal Meeting. Northwestern University. Evanston, USA May 16, 2015
- Geometry Seminar at Indiana University. Bloomington, USA April 16, 2015
- Analysis and PDE seminar at University of California at Berkeley. Berkeley, USA March, 2015
- Analysis seminar at Temple University. Philadelphia, USA March, 2015
- **Colloquium at Drexel University.** Philadelphia, USA Feb 9, 2015
- Analysis seminar at McGill University Dec, 2014
- Faculty Colloquium at Harvard University March 10, 2014
- Analysis Seminar at Northwestern University Feb 25, 2014
- PDE Seminar at University of North Carolina at Chapel Hill. Nov, 2013
- Conference on Spectral Theory of Laplace and Schrödinger Operators. Banff, Canada . Aug, 2013
- Conference on Quantum chaos, resonances and Semiclassical measures. Roscoff, France June 2013.
- Workshop on Analytic Microlocal Analysis. Evanston, United States May 20-24, 2013.
- CMS Winter meeting. Montreal, Canada Dec, 2012.
- Analysis seminar at University of Toronto. Toronto, Canada Nov, 2012.
- Workshop on manifolds of metrics and probabilistic methods in geometry and analysis. Montreal, Canada. July 2-6, 2012
- Workshop on geometry of eigenvalues and eigenfunctions. Montreal, Canada June 4-8, 2012.
- Dartmouth Geometry and Topology Research seminar. Hanover, USA May 31, 2011.
- CMS Winter meeting. Vancouver Dec 4-6, 2010.