

Willie Rush Lim

Education

- 2019 – Present** **PhD in Mathematics, Stony Brook University, NY**
- Research Interests: Complex dynamical systems, renormalization theory
 - Advisor: Dzmitry Dudko
- 2015 – 2019** **MSci. in Mathematics, Imperial College London, UK**
- First class honors
 - Dissertation: “*Quadratic-Like Renormalisation in Holomorphic Dynamics*”
 - Advisor: Davoud Cheraghi

Research Papers

- [1] A priori bounds and degeneration of Herman rings with bounded type rotation number. Submitted to *Invent. Math.* [arXiv:2302.07794](https://arxiv.org/abs/2302.07794)
- [2] Rigidity of J-rotational rational maps and critical quasicycle maps. [arXiv:2308.07217](https://arxiv.org/abs/2308.07217)
- [3] Hyperbolicity of renormalization of critical quasicycle maps. In preparation. [current draft](#)

Talks

- 2023 March** “*From Herman Rings to Herman Curves*” – Complex Analysis and Dynamics Seminar, CUNY
- 2022 November** “*A Priori Bounds and Degeneration of Herman Rings*” – Dynamical Systems Seminar, Stony Brook University
- 2022 August** “*A Priori Bounds and Degeneration of Herman Rings*” ([video](#)) – On Geometric Complexity of Julia Sets IV, Banach Center, IMPAN

Conferences Attended

- 2023 August** Inaugural CNAM-Fields Nonlinear Days: Renormalization and Friends – Fields Institute. Participated in a poster session: [pdf](#)
- 2023 May** Around the Mandelbrot Set: celebrating the 60th birthday of Mitsuhiro Shishikura – Kyoto University
- 2022 December** Complex Dynamics in the Tropics: celebrating the 60th birthday of Carsten Lunde Petersen – IMPA. Participated in a poster session: [pdf](#)
- 2022 August** On Geometric Complexity of Julia Sets IV – Banach Center, IMPAN
- 2022 May** Adventurous Berkeley Complex Dynamics – MSRI
Participated in a poster session: [pdf](#)
- 2021 September** On Geometric Complexity of Julia Sets III (online) – Banach Center, IMPAN
- 2021 September** Advancing Bridges in Complex Dynamics (online) – CIRM

2021	March	Many Faces of Renormalization (online) – Simons Center
2020	March	Analysis, Dynamics, Geometry and Probability – Simons Center

Teaching Experience

2023	Summer	Instructor, MAT127 Calculus C (as part of Simons STEM Scholars Summer Bridge)
2022	Fall	Lecturer, MAT125 Calculus A
2022	Summer	Instructor, MAT203 Calculus III
2021	Summer	Instructor, MAT203 Calculus III
2020	Summer	Instructor, MAT342 Applied Complex Analysis
2019 – present		Teaching Assistant (as a grader and recitation leader) MAT131 Calculus I, MAT132 Calculus II, MAT211 Intro. to Linear Algebra, MAT303 Calculus IV with applications, MAT341 Applied Real Analysis, MAT351 Dynamics and Chaos, MAT536 Complex Analysis I

Honors and Awards

2019	IBM Prize for Excellence in Pure Mathematics
2019	Prize for Excellence in Support of Teaching, Imperial College London
2017	G-Research Prize
2015 – 2019	Dean's List, Imperial College London
2015 – 2019	President's Undergraduate Scholarship, Imperial College London

Outreach and Service

2022	Fall	Co-organizer of ENYGMMa (Empowering New York Gender Minority Mathematicians)
2022	Summer	Instructor of the Mathematics Summer Program (MathCamp) for high school students
2022	Spring	Directed Reading Program (Fractal Geometry)
2021	Spring	Directed Reading Program (The Symmetries of Things)
2020 – 2021		Co-organizer of the Graduate Student Seminar