

Willie Rush Lim

Education

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

Papers

- 2023** A priori bounds and degeneration of Herman rings of bounded type rotation number. [arXiv:2302.07794](https://arxiv.org/abs/2302.07794)
- 2023** Rigidity of bounded type rotational dynamics for rational maps (in preparation)
- 2023** Renormalization of critical quasicycle maps I: rigidity and universality (in preparation)

Teaching Experience

- 2023 Summer** Course Instructor, MAT127 Calculus C (as part of Simons STEM Scholars Program)
- 2022 Fall** Course Lecturer, MAT125 Calculus A
- 2022 Summer** Course Instructor, MAT203 Calculus III
- 2021 Summer** Course Instructor, MAT203 Calculus III
- 2020 Summer** Course 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,
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

Conferences and Workshops

2023	May	Around the Mandelbrot Set – Kyoto University
2022	December	Complex Dynamics in the Tropics – IMPA Participated in a poster session: pdf
2022	August	On Geometric Complexity of Julia Sets IV – Banach Center, IMPAN Gave a talk titled “A Priori Bounds and Degeneration of Herman Rings”: video
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 Renormalisation (online) – Simons Center
2020	March	Analysis, Dynamics, Geometry and Probability – Simons Center

Other Talks

2023	March	“From Herman Rings to Herman Curves” – Complex Analysis and Dynamics Seminar, CUNY
2023	February	“How to find the roots of any degree 2023 polynomials” – Graduate Student Seminar (GSS)
2022	March	“Intro. to Kahler Geometry” – Student Differential Geometry Seminar (SDGS)
2021	December	“(Dynamics of) Quadratic Polynomials” – GSS
2021	May	“Information Inequalities” – Analysis Student Seminar (ASS)
2021	March	“What Is... An Orbifold?” – GSS
2021	March	“Brunn-Minkowski and Concentration of Measures” – ASS
2020	October	“Subharmonic Functions and Convexity” – ASS
2020	February	“Subharmonic and Plurisubharmonic Functions” – SDGS
2019	December	“Renormalization of Unimodal Maps and Feigenbaum Universality” – Renormalization Student Seminar
2019	October	“Brushing the Hairs of Transcendental Entire Functions” – GSS
2019	February	“Quasiconformal Deformations and Sullivan's No Wandering Domains” – IMA's Tomorrow's Mathematicians Today, University of Greenwich

Outreach and Service

2022	Fall	Co-organiser of ENYGMMa (Empowering New York Gender Minority Mathematicians) – Stony Brook University
2022	Spring	Directed Reading Program (Fractal Geometry) – Stony Brook University
2021	Spring	Directed Reading Program (The Symmetries of Things) – Stony Brook University
2020 – 2021		Co-organiser of the Graduate Student Seminar – Stony Brook University