Willie Rush Lim

Education

2019 – Present **PhD in Mathematics, Stony Brook University, NY**
- Research Interests: Holomorphic dynamics, 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. arXiv:2302.07794

[2] Rigidity of J-rotational rational maps and critical quasicircle maps. arXiv:2308.07217

[3] Hyperbolicity of renormalization of critical quasicircle 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 – 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

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

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Teaching Experience

2023 Summer	Instructor, MAT127 Calculus C (as part of Simons STEM Scholars Program)
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) – 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-organizer of the Graduate Student Seminar – Stony Brook University

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