

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](#)

Recent Talks

- 2024 January** Geometry & Topology Seminar, Brown University
- 2023 November** Quasiworld Seminar
- 2023 March** Complex Analysis and Dynamics Seminar, CUNY
- 2022 November** Dynamical Systems Seminar, Stony Brook University
- 2022 August** On Geometric Complexity of Julia Sets IV, Banach Center, IMPAN

Conferences Attended

- 2024 January** International Colloquium on Randomness, Geometry, and Dynamics – IISER, Pune
- 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](#)

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| 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

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| 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, MAT341 Applied Complex Analysis, MAT351 Dynamics and Chaos, MAT536 Complex Analysis I |

Honors and Awards

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| 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

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| 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 |