JACK THOMPSON

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http://jthompson.au/

CURRENT POSITION

Jul. 2024 –	Associate Lecturer, University of Western Australia
present	Equivalent to a postdoctoral position at international institutions.

EDUCATION

Feb. 2021 –	Doctorate in Philosophy, University of Western Australia
Dec. 2024	Supervisors: Enrico Valdinoci, Serena Dipierro, and Giorgio Poggesi.
	Thesis Title: <i>Stability results for nonlocal Serrin-type problems, antisymmetric Harnack in-</i> <i>equalities, and geometric estimates.</i>
2020	Bachelor of Mathematics (Honours), University of Queensland
	Supervisors: Artem Pulemotov (principle), and Timothy Buttsworth
	Thesis Title: <i>On the Uniqueness of Conformal Metrics with Prescribed Curvature</i> GPA: 7/7, First Class Honours
2017 - 2019	Bachelor of Mathematics, University of Queensland
	GPA: 6.83/7

AWARDS AND SCHOLARSHIPS

Mar. 2025	AustMS Lift-off Fellowship
	A prestigious fellowship to jump-start the careers of young mathematicians by support- ing them after submitting their PhD thesis. The Lift-off Fellowships are awarded on academic merit.
Sep. 2023	AMSI-AustMS Heidelberg Laureate Forum Travel Support
Dec. 2020	Ethel Raybould Prize in Mathematics
	Awarded to the honours student in the field of mathematics at the University of Queens- land with the greatest proficiency for the year.
Feb. 2021 – Jul. 2024	Australian Government RTP Fees Offset Scholarship and RTP Stipend
	The RTP Stipend provides a stipend during my PhD candidature and the RTP Fees Offset Scholarship is used by the University to offset tuition fees for the research component of my PhD.
Feb. 2017–	Seven time recipient of Dean's Commendation for Academic Excellence
Nov. 2019	Awarded each semester to a student at the University of Queensland who has displayed outstanding academic achievements.

ARTICLES AND PREPRINTS

Nov. 2024 Serena Dipierro, Mateusz Kwaśnicki, Jack Thompson, Enrico Valdinoci. *The nonlocal Harnack inequality for antisymmetric functions: an approach via Bochner's relation and harmonic analysis*. Submitted. Available preprint at arXiv:2411.11272.

- Jun. 2024 Jack Thompson. *Density estimates and the fractional Sobolev inequality for sets of zero s-mean curvature*. Submitted. Available preprint at arXiv:2406.04618.
- Sep. 2023 Serena Dipierro, Giorgio Poggesi, Jack Thompson, Enrico Valdinoci. *Quantitative stability for the nonlocal overdetermined Serrin problem*. Submitted. Available preprint at arXiv:2309.17119.
- Aug. 2023 Serena Dipierro, Giorgio Poggesi, Jack Thompson, and Enrico Valdinoci. "Quantitative stability for overdetermined nonlocal problems with parallel surfaces and investigation of the stability exponents". In: *J. Math. Pures Appl.* (9) 188 (2024), pp. 273–319
- Jun. 2023 Serena Dipierro, Jack Thompson, Enrico Valdinoci. *Some nonlocal formulas inspired by an identity of James Simon*. Submitted. Available preprint at arXiv:2306.15179.
- Apr. 2022 Serena Dipierro, Jack Thompson, and Enrico Valdinoci. "On the Harnack inequality for antisymmetric *s*-harmonic functions". In: *J. Funct. Anal.* 285.1 (2023), Paper No. 109917, 49
- Mar. 2022 Serena Dipierro, Giorgio Poggesi, Jack Thompson, and Enrico Valdinoci. "The role of antisymmetric functions in nonlocal equations". In: *Trans. Amer. Math. Soc.* 377.03 (2024), pp. 1671–1692

INVITED PRESENTATIONS

- May. 2025 University of Milan Analysis Seminar, Milan, Italy.
- Jan. 2024 MATRIX Elliptic Partial Differential Equations, Geometry, and the Calculus of Variations, Creswick, Australia.
- Dec. 2023 AustMS Annual Meeting, Brisbane, Australia.
- Jul. 2023 International Conference on Nonlinear Partial Differential Equations In Honour of Professor Neil Trudinger's 80th Birthday, Sydney, Australia.
- May 2023 Asia-Pacific Analysis and PDE Seminar, online.
- Jan. 2023 MATRIX Minimal surfaces and geometric flows: interaction between the local and the nonlocal worlds, Creswick, Australia.
- Dec. 2022 AustMS Annual Meeting, Sydney, Australia.
- Aug. 2022 Australian Geometric PDE Seminar, online.
- Dec. 2021 AustMS Annual Meeting, online.

TEACHING

Sem. 2, 2025	Course coordinator at the <i>University of Western Australia</i> . Taught <i>MATH1720: Mathematics Fundamentals</i> .
Sem. 2, 2024	Course coordinator at the University of Western Australia. Taught MATH1720: Mathematics Fundamentals.
Sem. 1, 2022 – Sem 2, 2022	Assistant to course coordinator at <i>University of Western Australia</i> . Extra responsibilities included organisation of teaching assistants, running of weekly assignments, and involvement in mid-semester/final exam. Taught two classes in this period.
Sem. 1, 2021 – Sem. 1, 2024	Teaching assistant at the <i>University of Western Australia</i> . Taught 12 classes in this period. A complete list can be found on my website.

Sem. 1, 2019 **Teaching assistant** at the *University of Queensland*. Taught 10 classes in this period. A complete list can be found on my website.

ORGANISATION

Feb. 2024 –	Organisation committee for 7-th Australian Mathematical Sciences Students Conference,
Nov. 2024	held at Western Sydney University in Sydney, Australia between 4 Dec. 2024–6 Dec.
	2024.
Aug. 2022 –	Organised a weekly outreach seminar series for undergraduate students.
Jul. 2024	

SERVICE

	Peer Review: Calculus of Variations and Partial Differential Equations, and Discrete and Continuous Dynamical Systems.
Dec. 2023 – Dec. 2024.	Vice-president of the newly formed Association of Australian Mathematics Students (AAMS).
Feb. 2023 – Jul. 2024	Maths Union postgraduate representative, University of Western Australia.

VISITING EXPERIENCES

Jan. 2025 – May 2025	<i>Universitá degli Studi di Milano,</i> Italy. Invited by M. Cozzi and G. Ciraolo.
Oct. 2023	Universitat de Barcelona, Bracelona. Invited by X. Ros-Oton.
Sep. 2023	10-th Heidelberg Laureate Forum.
Oct. 2022 – Nov. 2022	Universitat de Barcelona, Bracelona. Invited by X. Ros-Oton.

Last updated: Apr. 2025.