Ross Ogilvie

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Education

University of Sydney

PhD 2012–2017

- Thesis *Deformations of Harmonic Tori in S^3* under Dr Emma Carberry
- T. G. Room Medal – awarded for the best PhD thesis in Pure Mathematics

Bachelor of Science, Advanced Mathematics 2008–2011

- First Class Honours with University Medal
- Thesis *The Futaki Invariant* under Dr Zhou Zhang

Graduate Diploma in Education 2020

Experience

University of Mannheim Mannheim, Germany

Postdoctoral Researcher – Chair of Geometric Analysis 2019–present

- Research focus in differential geometry under Prof. Martin Schmidt: Willmore functional, constant mean curvature surfaces, variational problems
- Award-winning lecturer; taught courses of up to 200 students, in person and online, in German and English

University of Sydney Sydney, Australia

Casual Academic 2015–2019

- Lecturer for Calculus, Discrete Mathematics; Tutor including summer school and bridging courses
- Disability Accommodation Support Work (scribe; reader for vision impaired)

Postgraduate Teaching Fellow 2013–2015

- Lecturer and Unit Coordinator for Applications of Calculus and Basic Pharmaceutical Sciences

Casual Academic 2011–2013

University of Notre Dame Australia Sydney, Australia

Casual Academic 2019

- Lecturer in Statistics for Teacher Professional Development

Australian Catholic University Sydney, Australia

Casual Academic 2017–2019

- Lecturer in Applied Science for Technologists; Tutor

Publications

Ogilvie, R. (2026). *Whitham Deformations of Nodal Spectral Curves of the Sinh-Gordon Equation.* Preprint. arXiv:2610.40197.

Hasse, N., Ogilvie, R. & Schmidt, M. U. (2026). *A New Invariant for Doubly Periodic Solutions of the Sinh-Gordon Equation.* Preprint. arXiv:2610.39935.

Ogilvie, R. (2026). *Weakly conformal maps into $\mathbb{R}^3$ and $\mathbb{R}^4$.* 2025 MATRIX Annals, Part II, MATRIX Book Series. matrix-inst.org.au.

Ogilvie, R. & Schmidt, M. U. (2025). *Quaternionic Analysis of Conformal Maps and the Willmore Functional.* Under review. x+227 pp. arXiv:2506.17723.

Carberry, E. & Ogilvie, R. (2020). *The space of equivariant harmonic tori in the 3-sphere.* Journal of Geometry and Physics. doi:10.1016/j.geomphys.2020.103808.

Carberry, E. & Ogilvie, R. (2018). *Whitham Deformations and the Space of Harmonic Tori in S^3.* Journal of the London Mathematical Society. doi:10.1112/jlms.12191.

Grants and Awards

Beijing Institute of Mathematical Sciences and Applications Travel Support	2025
Sydney Mathematical Research Institute Travel Support	2025
University of Mannheim Teaching Award	2024
T. G. Room Medal – for a PhD thesis in Pure Mathematics of outstanding merit	2017
Philipp Hofflin International Research Travel Scholarship	2014
Postgraduate Teaching Fellowship	2013
First Class Honours and University Medal in Pure Mathematics	2011

Presentations

Constrained Willmore Surfaces in $\mathbb{R}^3$ and $\mathbb{R}^4$ 2026
Presentation at Conference "Surface Theory: Geometry, Analysis, and Experiments", TSIMF, Sanya, CN.

Kodaira and Weierstrass Representations of (Weakly) Conformal Maps 2025
Mini-course at Conference "Integrable Geometry: Smooth and Discrete", MATRIX Institute, AU.

Existence of Constrained Willmore Surfaces in $\mathbb{R}^3$ and $\mathbb{R}^4$ 2025
University of Sydney, AU; University of NSW, AU (invited talks).

Willmore Tori and Their Spectral Curves, University of Sydney, AU (invited talk). 2020

Harmonic Tori in 3-Sphere, Conference "Differential Geometry and its Applications", CZ (poster). 2019

Moduli Space of Harmonic Tori in 3-Sphere 2017
Leibniz University Hannover, DE; University College Cork, IE; University of Bath, UK; University of Leicester, UK (invited talks); Australian Mathematical Society Conference (session presentation).

Deformations of Harmonic Maps 2014
"The Geometry, Topology and Physics of Moduli Spaces of Higgs Bundles" Conference, Institute of Mathematical Sciences, Singapore (session presentation).

Harmonic Maps and Spectral Curves, Universities of Mannheim and Tübingen, DE (invited talks). 2014

Harmonic Maps in 3-Sphere, Australian Mathematical Society Conference (session presentation). 2013

Geometric Measure Theory, AMSI Summer School. 2011

Teaching and Supervision

- University of Mannheim Teaching Award (2024), inaugural winner in the category for junior academics, for the "innovative concept" of a new course in Riemannian Geometry
- Average student evaluation of 1.17 on a scale from 1 (best) to 5 for overall satisfaction with the instructor
- Extensive use of interactive 3D models (Desmos, three.js) that students explore in their homework
- Lecturer and course coordinator for Applications of Calculus (around 500 students), University of Sydney
- Exercise leader for Analysis I and II, University of Mannheim: recruited, hired and mentored the tutor team
- Supervised bachelor's theses; organised a reading course in Riemann Surfaces to meet a particular student's needs

Academic and Volunteer Services

- Founded and coordinated the annual *Pi Day* at the University of Mannheim: interdisciplinary student presentations, sponsor acquisition, and outreach to promote mathematics across faculties
- Volunteered as IT-support for the University of Mannheim Student Association (3+ years)
- Volunteered as adult leader of Venturer Scout Unit (5+ years)