

# TOBIN CARLTON VAN BUIZEN

Mathematics Honours and Statistics, Australian National University.

Research interests: equivariant stable homotopy theory & THH/TC.

Accelerated entry: commenced university at 15; completed Honours year at 20.

(+61) 490 857 067  
[first].[last]@anu.edu.au  
tobincarltonvanbuizen.com

---

EDUCATION	<b>The Australian National University</b> <i>Bachelor of Mathematical Sciences (Honours)</i>	Canberra, Australia 2021–2025
	<ul style="list-style-type: none"><li>• First Class Honours</li><li>• Supervisor: Dr. Vigleik Angeltveit</li><li>• Research area: Equivariant Stable Homotopy Theory</li><li>• Descriptive course list (upper-division/graduate): Available <a href="#">here</a>.</li></ul>	
	<b>The Australian National University</b> <i>Bachelor of Statistics</i>	Canberra, Australia 2021–2024
	<ul style="list-style-type: none"><li>• Descriptive course list (upper-division/graduate): Available <a href="#">here</a>.</li></ul>	
	<b>Australian Mathematical Sciences Institute</b> <i>Summer School 2024</i>	Canberra, Australia 2023–2024
	<ul style="list-style-type: none"><li>• Descriptive course list: Available <a href="#">here</a>.</li></ul>	
RESEARCH PROJECTS	<b>Honours Thesis: Twisted Topological Hochschild Homology</b> <i>Australian National University</i>	2025.01–2025.11
	<ul style="list-style-type: none"><li>• Supervisor: Dr. Vigleik Angeltveit. Full thesis document available <a href="#">here</a>.</li><li>• Develop a twisted model of <math>p</math>-cyclotomic spectra and twisted TC for <math>C_n</math>-ring spectra.</li><li>• Provide a Nikolaus-Scholze style theorem for computing twisted TC.</li><li>• Provide an identification between norms and twisted cyclic bar constructions.</li></ul>	
	<b>Odd Primary Hopf Invariant One</b> <i>Australian National University</i>	2025.02–2025.06
	<ul style="list-style-type: none"><li>• Survey odd–primary refinements and constraints on Hopf invariant one.</li></ul>	
	<b>Lévy Integration</b> <i>Australian National University</i>	2024.08–2024.11
	<ul style="list-style-type: none"><li>• Construct Lévy–Itô integration for general Lévy processes and compare with Itô integration.</li><li>• Worked examples for compound Poisson and variance–gamma processes.</li></ul>	
	<b>Applications of Differential Forms to Homotopy Theory</b> <i>Australian National University</i>	2024.08–2024.11
	<ul style="list-style-type: none"><li>• Survey rational homotopy theory and differential graded algebras.</li></ul>	
<b>Kervaire Invariant One: <math>C_2</math>-Equivariance and <math>KR</math>-Theory</b> <i>Australian National University</i>	2024.02–2024.06	
<ul style="list-style-type: none"><li>• Expository project connecting <math>C_2</math>-equivariant techniques to the Hill-Hopkins–Ravenel approach.</li></ul>		
<b>UMD Spaces</b> <i>Australian National University</i>	2023.08–2023.11	
<ul style="list-style-type: none"><li>• Expository project on spaces with unconditional martingale differences, and applications to stochastic calculus.</li></ul>		

TEACHING	<b>Demonstrator</b>   The Australian National University	2023.07–2025.11
	<ul style="list-style-type: none"> <li>• <b>MATH1005:</b> Discrete Mathematical Models (2023.07–2024.11) — ran workshops, marked assignments, wrote solutions.</li> <li>• <b>MATH2222:</b> Introduction to Mathematical Thinking (2025.02–2025.06) — ran workshops, marked assignments.</li> <li>• <b>MATH4204:</b> Algebraic Topology (Honours) (2025.07–2025.11) — marked assignments.</li> </ul>	
TALKS	<b>THH with a “Twist”</b> — Honours Conference, ANU	2025.11
	<b>What is... <math>G</math>-stuff?</b> — What is...? Seminar, ANU	2025.08
	<b>Odd Primary Hopf Invariant One</b> — VBKT Seminar, ANU	2025.06
	<b>The Scariest Maths Topics (in 8 minutes)</b> — Maths in the Pub	2025.05
	<b>Lévy Integration</b> — Stochastic Analysis & Financial Applications	2024.11
	<b><math>C_2</math>-Equivariance and <math>KR</math>-Theory</b> — Stable Homotopy Theory Seminar, ANU	2024.06
SERVICE	Co-organiser, “What is...?” student seminar, ANU (2025)	
WORK EXPERIENCE	<b>Evolve Capabilities</b> <i>Data Analyst</i>	Canberra, Australia 2026.01–Present
	<b>Australian Public Service</b> <i>Configuration Management &amp; Reporting Service Delivery Manager</i>	Canberra, Australia 2023.02–2026.01
SKILLS	<b>Programming:</b> Python, R, MATLAB; Excel <b>Typesetting:</b> L <sup>A</sup> T <sub>E</sub> X (BibTeX, TikZ, TikZ-cd) <b>Languages:</b> English (native); some Chinese	
AWARDS	<ul style="list-style-type: none"> <li>• Caltex Best All Rounder Award — Presented in recognition of excellence in academic, leadership, sporting and community service activities.</li> <li>• Member of Australian MENSA.</li> </ul>	