

Oliver R. Stockdale  
(he/him)  
**Curriculum Vitae**

## Personal Information

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Place & Date of Birth: Durham, United Kingdom | 4 September 1997  
Place of Residence: Heidelberg, Germany  
Email: [oliver.stockdale@kip.uni-heidelberg.de](mailto:oliver.stockdale@kip.uni-heidelberg.de)  
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## Qualifications

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Mar 2021 | Master of Philosophy in Physics, **The University of Queensland**, Australia  
Dec 2018 | Bachelor of Advanced Science (Hons. I) in Physics, **The University of Queensland**, Australia  
Dec 2014 | Queensland Certificate of Education, **Grace Lutheran College**, Australia

## Education

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Oct 2020 - Present | Doctoral Studies in Physics, **Kirchhoff-Institut für Physik, Universität Heidelberg**, Germany (Anticipated completion: Sep 2023)  
Apr 2019 - Sep 2020 | Master of Philosophy in Physics, **ARC Centre of Excellence in Future Low-Energy Electronics Technologies, The University of Queensland**, Australia  
Thesis title: *Dynamics of vortex cluster crystallisation and single-vortex pinning in two-dimensional superfluids*  
Jan 2019 | Australian and New Zealand School in Ultracold Physics, **The University of Otago**, New Zealand  
2015 - 2018 | Bachelor of Advanced Science in Physics, **The University of Queensland**, Australia  
Thesis title: *Models of vortex dynamics in thin-film superfluid helium*  
Jan 2018 | Canberra International Physics Summer School on *Topological Matter*, **The Australian National University**, Australia  
Sep - Dec 2016 | Exchange Program, **University College London**, United Kingdom  
2010 - 2014 | High School, **Grace Lutheran College**, Australia

## Teaching Experience

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Summer Semester 2021 | Tutor for *Quantum Computing and Quantum Information*, **Universität Heidelberg**, Germany  
Semester 2, 2019 | Tutor for *Statistical Mechanics* at **The University of Queensland**, Australia  
Semester 2, 2018 & Semester 1, 2019 & 2020 | Laboratory Demonstrator for *Electromagnetism and Modern Physics*, **The University of Queensland**, Australia  
Semester 1, 2018, 2019, & 2020 | Laboratory Demonstrator for *Mechanics and Thermal Physics*, **The University of Queensland**, Australia  
Semester 2, 2017 | Tutor for *Physical Basis of Biological Systems*, **The University of Queensland**, Australia  
Semester 1, 2016 & 2017 | Peer Assisted Study Session leader for Electromagnetism and Modern Physics, **The University of Queensland**, Australia

## Service

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Mar 2021 - Present	Student Representative, Equal Opportunities Team, <a href="#">ISOQUANT</a> , <a href="#">Heidelberg</a>
Feb 2021 - Present	PhD Student Contributor, <a href="#">Physics World</a>
Apr 2019 - Sep 2020	Special Governance Committee - Education and Training, <a href="#">ARC Centre of Excellence in Future Low-Energy Electronics Technologies</a>
May 2019 - Sep 2020	Chair, UQ Bose-Einstein Condensate Journal Club
May 2019 - Sep 2020	Volunteer, UQ Physics Museum

## Scholarships and Awards

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Jan 2021	Recommendation for Dean's Award for Outstanding Higher Degree by Research Thesis, The University of Queensland
Jun 2019	Runner-Up, School of Mathematics and Physics 3-Minute Thesis Competition
Apr 2019 - Sep 2020	Research Training Program, Australian Government
Feb - Mar 2019	Australian Research Council Centre of Excellence for Engineered Quantum Systems Work Experience Scholarship
Dec 2018	Best Poster by an undergraduate student, FLEET Annual Meeting
Jun 2016	The University of Queensland Student Exchange Scholarship
May 2016 & 2017	Winter Research Scholarship, The University of Queensland (×2)
Nov 2015 & 2017	Summer Research Scholarship, The University of Queensland (×2)
Jul 2015, Jul 2018, Dec 2018	Dean's Commendation for Academic Excellence, The University of Queensland (×3)
Nov 2014	Runner-Up Dux of Grace Lutheran College

## Referees

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Priv.-Doz. Dr. Martin Gärttner Group Leader, Universität Heidelberg marting@kip.uni-heidelberg.de (+49) 6221 545185	Prof. Matthew J. Davis Head of Physics, The University of Queensland mdavis@physics.uq.edu.au (+61) 7 3346 9824	Prof. Warwick P. Bowen ARC Future Fellow, The University of Queensland wbowen@physics.uq.edu.au (+61) 7 3346 9425
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## Publications (and Preprints)

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| Jun 2021 | S. Floerchinger, M. Gärttner, T. Haas, <b>O. R. Stockdale</b> , <i>Entropic entanglement criteria in phase space</i> . <a href="#">Physical Review A <b>105</b>, 012409 (2022)</a> .   |
| Dec 2021 | <b>O. R. Stockdale</b> , M. T. Reeves, M. J. Davis, <i>Dynamical mechanisms of vortex pinning in superfluid thin films</i> . <a href="#">Physical Review Letters <b>127</b>, 255302 (2021)</a> .   |
| Oct 2020 | M. T. Reeves, K. Goddard-Lee, G. Gauthier, <b>O. R. Stockdale</b> , H. Salman, T. Edmonds, X. Yu, A. S. Bradley, M. Baker, H. Rubinsztein-Dunlop, M. J. Davis, T. W. Neely, <i>Emergence of off-axis equilibria in a quantum vortex gas</i> . <a href="#">arXiv:2010.10049 (2020)</a> .                  |
| Jul 2020 | <b>O. R. Stockdale</b> , M. T. Reeves, X. Yu, G. Gauthier, K. Goddard-Lee, W. P. Bowen, T. W. Neely, M. J. Davis, <i>Universal dynamics in the expansion of vortex clusters in a dissipative two-dimensional superfluid</i> . <a href="#">Physical Review Research <b>2</b>, 033138 (2020)</a> .         |
| Dec 2019 | Y. P. Sachkou, C. G. Baker, G. I. Harris, <b>O. R. Stockdale</b> , S. Forstner, M. T. Reeves, X. He, D. L. McAuslan, A. S. Bradley, M. J. Davis, W. P. Bowen, <i>Coherent vortex dynamics in a strongly-interacting superfluid on a silicon chip</i> . <a href="#">Science <b>366</b>, 1480 (2019)</a> . |

## Conferences

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| Jun 2021 | Entanglement in Quantum Fields Workshop, Heidelberg, Germany<br>Contributed Talk  |
| May 2021 | Young Atom Optician Conference (YAO-2021), Aarhus, Denmark (Online, due to COVID)<br>Poster Presentation                          |
| Mar 2021 | American Physical Society March Meeting 2021 (Online, due to COVID)<br>Contributed Talk   |
| Jan 2020 | 10 <sup>th</sup> International Conference on Spontaneous Coherence in Excitonic Systems, Melbourne, Australia<br>Contributed Talk |
| Dec 2018 | 23 <sup>rd</sup> Australian Institute of Physics Congress, Perth, Australia<br>Poster Presentation                                |