

## Employment History

- **Defence Science & Technology Group** ..... *Mar. 2005 – Present*  
*Defence Research Scientist*
  - Working in support of the [Australian Collins Class Submarines](#) and the [Future Submarine Program](#)
- **Adept Electronic Solutions** ..... *Nov. 2004 – Feb. 2005*  
*Scientific consultant & Programmer*
  - Extended the development of an [Online Ore Sizing System](#), a non-contact vision inspection system used to automatically determine the size distribution of ore on a conveyor
- **University of Cambridge** ..... *Oct. 2002 – Oct. 2004*  
*Postdoctoral Research Fellow in Quantum Information Science*
  - Investigated the fundamental concept of [quantum entanglement](#)
  - Lectured to 2<sup>nd</sup> and 3<sup>rd</sup> year Cambridge computer science students
  - Collaborated with researchers at [MIT](#) and [CalTech](#) in USA
  - Presented work at a number of national and international conferences
- **University of Queensland** ..... *1999 – 2002*  
*Teaching Assistant*
  - Wrote tutorials for both physics and engineering students
  - Managed a team of ten tutors
  - Marked examination questions for over 600 engineering and physics students
- **Murdoch University** ..... *1997 – 1998*  
*Undergraduate Tutor*
  - Mathematics tutor in a number of undergraduate courses
- **Wesley College** ..... *1994 – 1997*  
*Secondary School Tutor*
  - Tutored a wide range of year levels in both mathematics and physics

## Education

- **University of Queensland** ..... *1999 – 2002*  
*PhD, Physics (Small scale quantum algorithms)*
  - The field of [quantum computation](#) is at the cutting-edge of modern science
  - Combined physics, computer science and mathematics
  - Procured over \$80,000 in scholarships, grants and awards, including;
    - \* Scholarship as top PhD student coming to UQ in 1999
    - \* Award for best presentation at a national conference
    - \* Travel grant (collaborated with leading scientists at both [MIT](#) and [CalTech](#) in USA)
- **Murdoch University** ..... *1994 – 1998*  
*BSc (Honours 1<sup>st</sup> Class)*
  - Double major in mathematics & statistics and applied computational physics
  - Received Vice-Chancellor’s Commendation for Academic Excellence
  - Received prizes for being the top 3<sup>rd</sup> year student in both physics and mathematics
- **All Saints’ College** ..... *1988 – 1993*  
*Secondary School*
  - Graduated with straight A’s in: *Economics, Physics, Chemistry, English Literature, Calculus, Trig & Geo*
  - Obtained a scholarship to attend Murdoch University

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## Publications

(for a complete list see [www.Travaglione.com](http://www.Travaglione.com))

Refereed articles and conference proceedings \_\_\_\_\_ 12 papers (368 citations)

- [12] [Using a single-board microcontroller and ADC to perform real-time sonar signal processing.](#)  
**Ben Travaglione.** In *Proceedings of ACOUSTICS 2016*, 2016.
- [11] [High resolution undersea acoustic data acquisition using single-board microcontrollers.](#)  
**Ben Travaglione**, Andrew Munyard, and David Matthews. In *Australian Acoustical Society Acoustics 2015 Hunter Valley*, 2015.
- [10] [Using low cost single-board microcontrollers to record underwater acoustical data.](#)  
**Ben Travaglione**, Andrew Munyard, and David Matthews. In *43rd International Congress on Noise Control Engineering*, 2014. (5 citations).
- [9] [Ultra-wide sensor arcs for low frequency sonar detection with a baffled cylindrical array.](#)  
Derek C. Bertilone, Chaoying Bao, **Ben C. Travaglione**, and Damien S. Killeen. *The Journal of the Acoustical Society of America*, 126(5):EL107–EL111, 2009.
- [8] [Quantum separability and entanglement detection via entanglement-witness search and global optimization.](#)  
L.M. Ioannou and **B.C. Travaglione.** *Physical Review A*, 73(5):52314, 2006. ([quant-ph/0602223](#)). (20 citations).
- [7] [Improved algorithm for quantum separability and entanglement detection.](#)  
LM Ioannou, **BC Travaglione**, D. Cheung, and AK Ekert. *Physical Review A*, 70(6):60303, 2004. ([quant-ph/0403041](#)). (28 citations).
- [6] [Designing and implementing small quantum circuits and algorithms.](#)  
**Ben Travaglione.** In *DAC '03: Proceedings of the 40th annual Design Automation Conference*, pages 894–899, New York, NY, USA, 2003. ACM.
- [5] [Preparing encoded states in an oscillator.](#)  
**BC Travaglione** and GJ Milburn. *Physical Review A*, 66(5):52322, 2002. ([quant-ph/0205114](#)). (18 citations).
- [4] [Read-only-memory-based quantum computation: Experimental explorations using nuclear magnetic resonance and future prospects.](#)  
DR Sypher, IM Brereton, HM Wiseman, BL Hollis, and **BC Travaglione.** *Physical Review A*, 66(1):12306, 2002. (5 citations).
- [3] [Rom-based computation: Quantum versus classical.](#)  
**B.C. Travaglione**, M.A. Nielsen, H.M. Wiseman, and A. Ambainis. *Quantum Information and Computation*, 2(4):324–332, 2002. ([quant-ph/0109016](#)). (17 citations).
- [2] [Implementing the quantum random walk.](#)  
**BC Travaglione** and GJ Milburn. *Physical Review A*, 65(3):32310, 2002. ([quant-ph/0109076](#)). (249 citations).
- [1] [Generation of eigenstates using the phase-estimation algorithm.](#)  
**BC Travaglione** and GJ Milburn. *Physical Review A*, 63(3):32301, 2001. ([quant-ph/0008053](#)). (26 citations).

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### Miscellaneous

- [5] [Transmitter-receiver separation for multistatic sonar.](#)  
**B.C. Travaglione** and T. Forward. Technical Note DSTO-TN-0735, Defence Science & Technology Organisation, 2007. (2 citations).
- [4] [Effectiveness of barrier patrol patterns when using a towed array sonar.](#)  
**B.C. Travaglione.** Technical Note DSTO-TN-0734, Defence Science & Technology Organisation, 2007.
- [3] [Convex separation from optimization via heuristics.](#)  
L.M. Ioannou, **B.C. Travaglione**, and D. Cheung. ([cs/0603089](#)). (1 citations), 2006.
- [2] [A Note on Quantum Separability.](#)  
LM Ioannou and **BC Travaglione.** ([quant-ph/0311184](#)). 2003.
- [1] [Phase estimation as a quantum nondemolition measurement.](#)  
**BC Travaglione**, GJ Milburn, and TC Ralph. ([quant-ph/0203130](#)). (3 citations), 2002.

## Ben Travaglione

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### Scientific & Technical Skills

- Advanced analytical, mathematical and problem solving abilities
- Broad knowledge of physics and mathematics gained through research, teaching and tertiary education
- Experienced at attaining funding through procurement of grants, scholarships and awards
- Excellent communication skills developed from lecturing, tutoring, presenting seminars and collaborating with national and international researchers
- Organizational skills developed from running courses, seminars and workshops
- Writing skills developed from producing reports, published papers, and theses

### Computer Skills

**OS** : Windows, Linux, Unix, Chrome OS, Android

**Languages** : C++, python, HTML, php, Perl, SQL, JavaScript, Various BASIC dialects, ...

**Packages** : Matlab, Jupyter, Mathematica, L<sup>A</sup>T<sub>E</sub>X, Google Docs, MS Office, git, ...

### Referees — Available on request