

Curriculum Vitae

————— Dominic W. Berry —————

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Nationality: Australian

Positions Held

- ⊕ **ARC Future Fellow**
Macquarie University, October 2011 – Present
- ⊕ **Postdoctoral Fellow**
University of Waterloo, January 2009 – September 2011
- ⊕ **Research Fellow (Level B)**
Macquarie University, September 2006 – December 2008
- ⊕ **ARC Australian Postdoctoral Research Fellow**
The University of Queensland, June 2004 – August 2006
- ⊕ **Macquarie University Research Fellow (Level B)**
Macquarie University, January 2003 – June 2004
- ⊕ **Research Associate**
Macquarie University, August 2001 – December 2002
- ⊕ **Tutorial Assistant**
The University of Queensland, March 1998 – June 2001
- ⊕ **Casual Tutor**
The University of Queensland, July 1997 – March 1998

Education

Course: Doctorate of Philosophy
The University of Queensland
Field: Physics
Thesis Title: Adaptive Phase Measurements
Supervisor: Prof. Howard Wiseman
Award Date: February 2002
Attended: January 1998 – July 2001

Course: Bachelor of Science, Honours
The University of Queensland
Major: Physics
Thesis Title: Heating Effects in Optical Trapping
Supervisors: A/Prof. Norman Heckenberg and Prof. Halina Rubinsztein-Dunlop
Graduation Date: August 1997
Result: Class I
Attended: July 1996 – June 1997

Course: Bachelor of Science
The University of Queensland
Major: Physics
Graduation Date: December 1995
Grade Point Average: 6.9/ 7.0
Attended: January 1993 – December 1995

Citations

My papers have been cited a total of 786 times (from Google Scholar on 17/04/2012), with three cited more than 70 times. The three most cited papers are:

1. B. L. Higgins, D. W. Berry, S. D. Bartlett, H. M. Wiseman, and G. J. Pryde, “Entanglement-free Heisenberg-limited phase estimation”, *Nature* **450**, 393 (2007). 127 citations
2. D. W. Berry and B. C. Sanders, “Optimal remote state preparation”, *Physical Review Letters* **90**, 057901 (2003). 106 citations
3. D. W. Berry, G. Ahokas, R. Cleve, and B. C. Sanders, “Efficient quantum algorithms for simulating sparse Hamiltonians”, *Communications in Mathematical Physics* **270**, 359 (2007). 73 citations

I have 15 papers with 15 or more citations, so my h-index is 15. In comparison, Hirsch (the inventor of the h-index) suggested that a value of about 12 would be a useful guideline for tenure decisions.

Successful Competitive Research Grants

Project Title	Investigators	Scheme	Value	Year
Robust quantum information and metrology	DW Berry	ARC Future Fellowship	\$168083	2010
			\$139088	2011
			\$139088	2012
			\$139088	2013
Resources for quantum networks	DW Berry	ARC Discovery (APD Fellowship)	\$71122	2004
			\$67922	2005
			\$70422	2006
Theory of resources for quantum networks	DW Berry	Macquarie University Research Fellowship	\$57866	2003
			\$62165	2004
			\$62165	2005
Remote implementation of operations	DW Berry	Macquarie University Startup Grant	\$6000	2003
Quantum Properties of Distributed Systems (QUPRODIS) – part of European Fifth Framework project	BC Sanders SD Bartlett DW Berry	IAP – International S&T Competitive Grants	\$15000	2003
			\$15000	2004
			\$15000	2005

Fellowships, Scholarships, Awards and Competitions

- 🇺🇦 Australian Research Council Postdoctoral Fellowship, 2004-2006
- 🇺🇦 Macquarie University Research Fellowship, 2003-2005
- 🇺🇦 APA Scholarship, 1998-2001
- 🇺🇦 University Medal at the University of Queensland, 1997
- 🇺🇦 The Duncan McNaughton Scholarship, 1996
- 🇺🇦 Australian Students Prize for Excellence, 1993
- 🇺🇦 Year 11 (1991) and Senior Dux (1992) at Wynnum High, 1991-1992
- 🇺🇦 Junior Dux of Science at Wynnum High, 1990
- 🇺🇦 Inaugural Mathematics Tournament, gold medal, 1990
- 🇺🇦 The Australian Mathematical Olympiad, silver certificate, 1992

Refereeing For International Journals

- Physical Review Letters
- Nature Photonics
- Physical Review A
- IEEE Transactions on Information Theory
- Journal of the Optical Society of America B
- Journal of Physics A & B
- New Journal of Physics

- Physics Letters A
- Optics Communications
- International Journal of Quantum Information

Research Highlights

- My work on algorithms provides the basis for some of the most important potential applications of quantum computers. I have developed an algorithm for solving differential equations on quantum computers [47]. This is an application of tremendous importance, because most applications of supercomputers are based on solving large systems of differential equations. I also developed the most efficient known algorithms for simulating physical quantum systems [9,21]. This has been used as the basis for some of the most exciting new developments in quantum computing, including evaluation of NAND trees (A. M. Childs *et al.*, *Theory of Computing* **5**, 119 (2009)), and solving systems of linear equations (*Phys. Rev. Lett.* **103**, 150502 (2009)).
- I developed, in collaboration with Howard Wiseman and Stephen Bartlett, a method for performing the most accurate possible phase measurements. This method is based on a linear optics implementation of the inverse quantum Fourier transform in quantum computing theory. This brings together techniques from quantum control, quantum metrology, and quantum computing. It was implemented experimentally at Griffith University, and appeared in *Nature* [4]. This work has been the subject of many reviews and media reports:
 - Nature Milestones: Photons (2010), chose this paper for the Fundamentals NPG library; one of 11 reprinted papers in Nature Publishing Group journals, covering the period 1926-2010. <http://www.nature.com/milestones/milephotons/library/fundamentals/index.html>
 - “Quantum physics rules”, Australian Research Council inaugural publication, *Outcomes: Results of research in the real world ‘08*, p. 60.
 - “World’s most precise ruler created”, *Australasian Science*, April 2008, p13.
 - J. L. O’Brien, “Precision Without Entanglement”, *Science* **318**, 1393 (2007).
 - J. P. Dowling, “Kittens catch phase”, *Nature* **450**, 362 (2007).
 - P. Ball, “The most accurate measurement ever made”, *Nature News*, 14 November 2007. <http://www.nature.com/news/2007/071114/full/news.2007.242.html>
 - S. Trad, “No size too tiny to gauge”, *The Australian*, 21 November 2007, p26.
 - “Quantum physics 'rules' -- Australian scientists create world's most accurate 'ruler'”, *Physorg*, 26 November 2007. <http://www.physorg.com/news115293536.html>
- In collaboration with Howard Wiseman, I developed the theory for feedback to track a fluctuating phase [38,24]. We then combined this with the newly developed theory of quantum smoothing, and collaborated with the experimental group headed by Elanor Huntington to achieve an experimental demonstration. This work was published in *Physical Review Letters* [3], has been highlighted as a *Physical Review Letters* editor’s suggestion, and has been the subject of reviews and media reports:
 - “A smoother quantum measurement”, *American Physical Society Synopses*, 15 March 2010. <http://physics.aps.org/synopsis-for/10.1103/PhysRevLett.104.093601>
 - M. Marquit, “Using quantum smoothing for optical phase estimation”, *Physorg*, 11 March 2010. <http://www.physorg.com/news187520515.html>

Letters

- [1] G. Y. Xiang, B. L. Higgins, D. W. Berry, H. M. Wiseman, and G. J. Pryde, “Entanglement-enhanced measurement of a completely unknown phase”, *Nature Photonics* **5**, 43 (2011).
- [2] D. W. Berry and A. I. Lvovsky, “Linear-optical processing cannot increase photon efficiency”, *Physical Review Letters* **105**, 203601 (2010).
- [3] T. A. Wheatley, D. W. Berry, H. Yonezawa, D. Nakane, H. Arao, D. T. Pope, T. C. Ralph, H. M. Wiseman, A. Furusawa, and E. H. Huntington, “Adaptive optical phase estimation using time-symmetric quantum smoothing”, *Physical Review Letters* **104**, 093601 (2010).
- [4] B. L. Higgins, D. W. Berry, S. D. Bartlett, H. M. Wiseman, and G. J. Pryde, “Entanglement-free Heisenberg-limited phase estimation”, *Nature* **450**, 393 (2007).
- [5] D. W. Berry, A. I. Lvovsky, and B. C. Sanders, “Interconvertibility of single-rail optical qubits”, *Optics Letters* **31**, 107 (2006).
- [6] D. W. Berry and B. C. Sanders, “Optimal remote state preparation”, *Physical Review Letters* **90**, 057901 (2003).
- [7] D. W. Berry and H. M. Wiseman, “Optimal states and almost optimal adaptive measurements for quantum interferometry”, *Physical Review Letters* **85**, 5098 (2000).

Full Length Papers

- [8] M. J. W. Hall, D. W. Berry, M. Zwierz, H. M. Wiseman, “Universality of the Heisenberg limit for estimates of random phase shifts”, *Physical Review A* **85**, 041802(R) (2012).
- [9] D. W. Berry and A. M. Childs, “Black-box Hamiltonian simulation and unitary implementation”, *Quantum Information and Computation* **12**, 29 (2012).
- [10] N. Wiebe, D. W. Berry, P. Høyer, B. C. Sanders, “Simulating quantum dynamics on a quantum computer”, *J. Phys. A: Math. Theor.* **44**, 445308 (2011).
- [11] D. W. Berry and A. I. Lvovsky, “Preservation of loss in linear-optical processing”, *Phys. Rev. A* **84**, 042304 (2011).
- [12] R. S. Said, D. W. Berry, and J. Twamley, “Nanoscale magnetometry using a single-spin system in diamond”, *Physical Review B* **83**, 125410 (2011).
- [13] D. W. Berry, M. Aguado, A. Gilchrist, and G. K. Brennen, “Non-Abelian anyonic interferometry with a multi-photon spin lattice simulator”, *New Journal of Physics* **12**, 053011 (2010).
- [14] N. Wiebe, D. W. Berry, P. Høyer, and B. C. Sanders, “Higher order decompositions of ordered operator exponentials”, *Journal of Physics A: Mathematical and Theoretical* **43**, 065203 (2010).
- [15] D. W. Berry, H. Jeong, M. Stobińska, and T. C. Ralph, “Fair-sampling assumption is not necessary for testing local realism”, *Physical Review A* **81**, 012109 (2010).
- [16] H. M. Wiseman, D. W. Berry, S. D. Bartlett, B. L. Higgins, and G. J. Pryde, “Adaptive measurements in the optical quantum information laboratory”, *IEEE Journal of Selected Topics in Quantum Electronics* **15**, 1661 (2009).
- [17] D. W. Berry, B. L. Higgins, S. D. Bartlett, M. W. Mitchell, G. J. Pryde, and H. M. Wiseman, “How to perform the most accurate possible phase measurements” *Physical Review A* **80**, 052114 (2009).
- [18] B. L. Higgins, D. W. Berry, S. D. Bartlett, M. W. Mitchell, H. M. Wiseman, and G. J. Pryde, “Demonstrating Heisenberg-limited unambiguous phase estimation without adaptive measurements”, *New Journal of Physics* **11**, 073023 (2009).

- [19] D. W. Berry, “Lower bounds for communication capacities of two-qudit unitary operations”, *Physical Review A* **76**, 062302 (2007).
- [20] D. W. Berry, “Implementation of multipartite unitary operations with limited resources”, *Physical Review A* **75**, 032349 (2007).
- [21] D. W. Berry, G. Ahokas, R. Cleve, and B. C. Sanders, “Efficient quantum algorithms for simulating sparse Hamiltonians”, *Communications in Mathematical Physics* **270**, 359 (2007).
- [22] D. W. Berry, A. I. Lvovsky, and B. C. Sanders, “Efficiency limits for linear optical processing of single photons and single-rail qubits”, *Journal of the Optical Society of America B* **24**, 189 (2007).
- [23] D. W. Berry and M. R. Dowling, “Two qubits can be entangled in two distinct temperature regions”, *Physical Review A* **74**, 062301 (2006).
- [24] D. W. Berry and H. M. Wiseman, “Adaptive phase measurements for narrowband squeezed beams”, *Physical Review A* **73**, 063824 (2006).
- [25] D. T. Pope, D. W. Berry, and N. K. Langford, “The practicality of adaptive phase estimation”, *Optics and Spectroscopy* **99**, 397 (2005).
- [26] D. W. Berry, “Qubit channels that achieve capacity with two states”, *Physical Review A* **71**, 032334 (2005).
- [27] D. W. Berry and B. C. Sanders, “Equivalence between two-mode spin squeezed states and pure entangled states with equal spin”, *Journal of Physics A: Mathematical and General* **38**, L205 (2005).
- [28] D. W. Berry and B. C. Sanders, “Numerical analysis of the capacities for two-qubit unitary operations”, *Physical Review A* **71**, 022304 (2005).
- [29] D. W. Berry, “Resources required for exact remote state preparation”, *Physical Review A* **70**, 062306 (2004).
- [30] D. W. Berry, S. Scheel, C. R. Myers, B. C. Sanders, P. L. Knight, and R. Laflamme, “Post-processing with linear optics for improving the quality of single-photon sources”, *New Journal of Physics* **6**, 93 (2004).
- [31] D. W. Berry, S. Scheel, B. C. Sanders, and P. L. Knight, “Improving single photon sources via linear optics and photodetection”, *Physical Review A* **69**, 031806(R) (2004).
- [32] D. W. Berry and B. C. Sanders, “Bounds on general entropy measures”, *Journal of Physics A: Mathematical and General* **36**, 12255 (2003).
- [33] D. W. Berry and B. C. Sanders, “Relation between classical communication capacity and entanglement capability for two-qubit unitary operations”, *Physical Review A* **68**, 032312 (2003).
- [34] X. Wang, B. C. Sanders, and D. W. Berry, “Entangling power and operator entanglement in qudit systems”, *Physical Review A* **67**, 042323 (2003).
- [35] D. W. Berry and B. C. Sanders, “Relations for classical communication capacity and entanglement capability of two-qubit operations”, *Physical Review A* **67**, 040302(R) (2003).
- [36] D. W. Berry and B. C. Sanders, “Near-optimal two-mode spin squeezing via feedback”, *Physical Review A* **66**, 012313 (2002).
- [37] D. W. Berry and B. C. Sanders, “Quantum teleportation and entanglement swapping for spin systems”, *New Journal of Physics* **4**, 8 (2002).
- [38] D. W. Berry and H. M. Wiseman, “Adaptive quantum measurements of a continuously varying phase”, *Physical Review A* **65**, 043803 (2002).

- [39] D. W. Berry, H. M. Wiseman, and J. K. Breslin, “Optimal input states and feedback for interferometric phase estimation”, *Physical Review A* **63**, 053804 (2001).
- [40] D. W. Berry and H. M. Wiseman, “The effects of time delays in adaptive phase measurements”, *Journal of Modern Optics* **48**, 797 (2001).
- [41] D. W. Berry and H. M. Wiseman, “Phase measurements at the theoretical limit”, *Physical Review A* **63**, 013813 (2001).
- [42] D. W. Berry, H. M. Wiseman, and Z. X. Zhang, “Heterodyne and adaptive phase measurements on states of fixed mean photon number”, *Physical Review A* **60**, 2458 (1999).
- [43] D. W. Berry, N. R. Heckenberg, and H. Rubinsztein-Dunlop, “Effects associated with bubble formation in optical trapping”, *Journal of Modern Optics* **47**, 1575 (2000).

Book Chapters

- [44] D. W. Berry, G. Ahokas, R. Cleve, and B. C. Sanders, “Quantum Algorithms for Hamiltonian Simulation”, invited chapter in *Mathematics of Quantum Computation and Quantum Technology*, (Chapman & Hall/CRC, 2007).

Refereed Conference Papers

- [45] D. W. Berry, “Qubit channels that achieve capacity with two states”, presented at Quantum Communications and Quantum Imaging III, SPIE International Symposium on Optics and Photonics (San Diego, CA, July 31 - August 4, 2005), *Proc. SPIE*, Vol. 5893, p. 589318.
- [46] D. W. Berry, S. Scheel, C. R. Myers, B. C. Sanders, P. L. Knight and R. Laflamme, “Improving single-photon sources via linear optics and photodetection”, presented at Fluctuations and Noise in Photonics and Quantum Optics II (Gran Canaria, Spain, 25-28 May 2004), *Proc. SPIE*, Vol. 5468, p. 232-243.

Unpublished Preprints

- [47] D. W. Berry, “Quantum algorithms for solving linear differential equations”, arXiv:1010.2745 (2010).

News & Views

- [48] D. W. Berry and H. M. Wiseman, “Quantum photonics: Quantum optics on a chip”, *Nature Photonics* **3**, 317 (2009).

Conferences (presenting author underlined)

1. D. W. Berry, “Quantum Algorithm for Solving Linear Differential Equations”, oral presentation at the 11th Asian Quantum Information Science Conference (Busan, August 23-30, 2011).
2. D. W. Berry and A. I. Lvovsky, “Conservation of Vacuum in an Interferometer”, oral presentation at the Quantum Electronics and Laser Science Conference (Baltimore, May 1-6, 2011).
3. D. W. Berry and A. I. Lvovsky, “Conservation of Vacuum in an Interferometer”, oral presentation at the APS March meeting (Dallas, March 21-25, 2011).
4. D. W. Berry, G. Y. Xiang, B. L. Higgins, H. M. Wiseman, and G. J. Pryde, “Entanglement-enhanced measurement of a completely unknown phase”, oral presentation at the Quantum Electronics and Laser Science Conference (San Jose, May 16-21, 2010).
5. D. W. Berry, G. Y. Xiang, B. L. Higgins, H. M. Wiseman, and G. J. Pryde, “Entanglement-enhanced measurement of a completely unknown phase”, invited oral presentation at ONR Entanglement Beyond the Optical Regime (Anaheim, February 8-11, 2010).







6. D. W. Berry and A. M. Childs, “The query complexity of Hamiltonian simulation and unitary implementation”, oral presentation at QIP2010 - 13th Workshop on Quantum Information Processing (Zurich, January 15-22, 2010).
7. D. W. Berry and A. M. Childs, “The complexity of implementing $N \times N$ black-box unitaries is $O(N^{3/4})$ ”, oral presentation at the 9th Asian Conference on Quantum Information Science (Nanjing, August 26-29, 2009).
8. D. W. Berry, B. L. Higgins, H. M. Wiseman, S. D. Bartlett, M. W. Mitchell, and G. J. Pryde, “Phase measurements at the theoretical limit”, invited oral presentation at the DEX-SMI workshop on quantum statistical inference (Tokyo, March 2-4, 2009).
9. D. W. Berry, B. L. Higgins, H. M. Wiseman, S. D. Bartlett, M. W. Mitchell, and G. J. Pryde, “Theory for Heisenberg Limited Phase Measurement”, oral presentation at the 18th National AIP Physics Congress (Adelaide, November 30 – December 5 2008).
10. N. Wiebe, D. W. Berry, P. Hoyer, and B. C. Sanders, “Computing time ordered operator exponentials efficiently and accurately”, invited oral presentation at the Workshop on quantum algorithms and complexity theory (Singapore, November 17-21, 2008).
11. D. W. Berry, H. Jeong, M. Stobińska, and T. C. Ralph, “The CHSH-Bell inequality and Tsirelson’s bound with postselection”, oral presentation at the Quantum Electronics and Laser Science Conference (San Jose, May 4-9, 2008).
12. D. W. Berry, B. L. Higgins, S. D. Bartlett, H. M. Wiseman, and G. J. Pryde, “Entanglement-free Heisenberg-limited phase estimation”, oral presentation at Noise Information & Complexity @ Quantum Scale (Erice, November 4-10, 2007).
13. B. L. Higgins, D. W. Berry, S. D. Bartlett, H. M. Wiseman, and G. J. Pryde, “Theory of entanglement-free Heisenberg-limited phase estimation”, invited keynote presentation at PRACQSYS (Sydney, July 9-13, 2007).
14. G. Ahokas, D. W. Berry, R. Cleve, and B. C. Sanders, “Efficient algorithms for simulating general dynamics on a quantum computer”, invited presentation at APCTP-TPI Meeting (Alberta, December 19-23, 2006).
15. D. W. Berry, “Remote implementation of multipartite unitary operations”, poster presentation at AIP Congress, (Brisbane, December 3-8, 2006).
16. B. C. Sanders, D. W. Berry, G. Ahokas, and R. Cleve, “Efficient quantum algorithms for simulating sparse Hamiltonians”, oral presentation at Asian Conference on Quantum Information Science 2006, (Beijing, September 1-4, 2006).
17. D. W. Berry, “Implementation of multipartite unitary operations with limited resources”, invited oral presentation at the XI International Conference on Quantum Optics (Minsk, May 26–31, 2006).
18. D. W. Berry, H. M. Wiseman, and E. Huntington, “Adaptive Phase Measurements for Narrowband Squeezed Beams”, oral presentation at the Quantum Electronics and Laser Science Conference (Long Beach, May 21-26, 2006).
19. D. W. Berry, A. I. Lvovsky and B. C. Sanders, “Interconvertibility of single-rail optical qubits”, poster presentation at American Physical Society March Meeting (Baltimore, March 13-17, 2006).
20. D. W. Berry, G. Ahokas, R. Cleve, and B. C. Sanders, “Efficient quantum algorithms for simulating sparse Hamiltonians”, invited presentation at the Sydney Quantum Information Theory Workshop, (Sydney, February 20-24, 2006).
21. D. W. Berry, G. Ahokas, R. Cleve, and B. C. Sanders, “Efficient simulations of sparse Hamiltonians”, invited presentation at the CIAR Quantum Information Processing Meeting (Quebec City, December 8-10, 2005).
22. D. W. Berry, “Qubit channels that achieve capacity with two states”, poster presentation at the Australasian Conference on Optics, Lasers and Spectroscopy (Rotorua, December 5-9, 2005).

23. D. W. Berry, G. Ahokas, R. Cleve, and B. C. Sanders, “Efficient simulations of sparse Hamiltonians”, invited presentation at the Mathematics of Quantum Computation and Quantum Technology conference (College Station, Texas, November 13-16, 2005).
24. D. W. Berry, “Qubit channels that achieve capacity with two states”, poster presentation at the ERATO conference on Quantum Information Science (Tokyo, August 26-30, 2005).
25. D. W. Berry, “Qubit channels that achieve capacity with two states”, invited oral presentation at Quantum Communications and Quantum Imaging III, SPIE International Symposium on Optics and Photonics (San Diego, CA, July 31 - August 4, 2005).
26. M. G. Raymer, A. C. Funk, and D. W. Berry, “Secure quantum key distribution using squeezed macroscopic light pulses”, oral presentation at the SPIE International Symposium on Optics and Photonics (San Diego, July 31 - August 4, 2005).
27. D. W. Berry, A. I. Lvovsky, and B. C. Sanders, “Interconvertibility of single-rail optical qubits”, poster presentation at the American Physical Society March Meeting (Los Angeles, March 21-25, 2005).
28. D. W. Berry, S. Scheel, C. R. Myers, B. C. Sanders, P. L. Knight, and R. Laflamme, “Postprocessing single photon sources via linear optics and photodetection”, invited oral presentation at the Xth International Conference on Quantum Optics (Minsk, May 30 – June 3, 2004).
29. D. W. Berry, S. Scheel, C. R. Myers, B. C. Sanders, P. L. Knight and R. Laflamme, “Improving single-photon sources via linear optics and photodetection”, oral presentation at Fluctuations and Noise in Photonics and Quantum Optics II (Gran Canaria, Spain, 25-28 May 2004).
30. D. W. Berry, S. Scheel, C. R. Myers, B. C. Sanders, P. L. Knight, and R. Laflamme, “Postprocessing single photon sources via linear optics and photodetection”, oral presentation at the Quantum Electronics and Laser Science Conference (San Francisco, May 16-21, 2004).
31. A. C. Funk, M. G. Raymer, and D. W. Berry, “Experimental demonstration of secure quantum key distribution using macroscopic non-classical optical pulses”, oral presentation at the Quantum Electronics and Laser Science Conference (San Francisco, May 16-21, 2004).
32. D. W. Berry, S. Scheel, C. R. Myers, B. C. Sanders, P. L. Knight, and R. Laflamme, “Improving single photon sources via linear optics and photodetection”, oral presentation at the Australasian Conference on Optics, Lasers and Spectroscopy (Melbourne, December 1-4, 2003).
33. D. W. Berry and B. C. Sanders, “Numerical analysis of capacities for two-qubit unitary operations”, poster presentation at the 4th European QIPC Workshop (Oxford, July 13-17, 2003).
34. D. W. Berry and B. C. Sanders, “Quantum teleportation and entanglement swapping for spin systems”, oral presentation at the Quantum Electronics and Laser Science Conference (Long Beach, May 19-24, 2002).
35. D. W. Berry and B. C. Sanders, “Quantum teleportation and entanglement swapping for systems of arbitrary spin”, oral presentation at the Australasian Conference on Optics, Lasers and Spectroscopy (Brisbane, December 3-6, 2001).
36. D. W. Berry and H. M. Wiseman, “Adaptive measurements and Optimal states for Quantum Interferometry”, oral presentation at the Quantum Electronic and Laser Science Conference (Baltimore, May 6-11, 2001).
37. H. M. Wiseman and D. W. Berry, “Adaptive measurements and optimal states for quantum interferometry”, oral presentation at 14th National Congress of the Australian Institute of Physics, (Adelaide, December 10-15, 2000).
38. D. W. Berry, N. R. Heckenberg, and H. Rubinsztein-Dunlop, “Strong heating effects in optical trapping”, oral presentation at the Australasian Conference on Optics, Lasers and Spectroscopy (Christchurch, December 14-17, 1998).

Conference Invitations

- International Conference on Quantum Optics, 2004
- SPIE Optics and Photonics Conference, 2005, 2006 & 2010
- International Conference on Quantum Optics, 2006
- Third Feynman Festival, 2006
- The Principles and Applications of Control in Quantum Systems (PRACQSYS), 2007
- DEX-SMI workshop on quantum statistical inference, 2009
- ONR Entanglement Beyond the Optical Regime, 2010

Teaching Experience

-  In 2008 I taught half of the fourth year honours course “Math Methods”. I gave all lectures for this part of the course, set assignments, provided notes and set the exam. One innovation was to end most lectures with a problem solving session. The students found this useful, because it helped them to see how to practically use the methods given in the lecture while the material was fresh in their minds.
-  In 2007 I gave lectures and set assignment questions for part of a fourth year honours course on quantum information at Macquarie University. I also set questions for an informal reading course on quantum information for PhD students.
-  In the first semester of 2007 I organised problem solving sessions on quantum information.
-  I taught a component of a fourth year honours course at Macquarie University in 2003. I gave a series of lectures on Fourier analysis, set assignments and set an exam question.
-  I gave a lecture on quantum algorithms as part of an honours course at Macquarie University in 2002.
-  As a Tutorial Assistant at the University of Queensland in 1999-2001 I organised the laboratory component of a course on engineering physics. I wrote the laboratory manual, organised tutors to supervise the experiments and supervised experiments myself. The laboratory manual I wrote was still in use several years later.

Referees

Professor Howard M. Wiseman

Position: Professor and Federation Fellow
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Professor Barry C. Sanders

Position: iCORE Professor of Quantum Information Science
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Professor Jason Twamley

Position: Chair Professor in Quantum Information Science
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