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School of Mathematical and Physical Sciences  
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Biography
Director Macquarie Centre for Quantum Engineering (MQCQE)  
Chief Investigator ARC Centre for Excellence in Engineered Quantum Systems (EQuS)  
Executive Board Member Sydney Quantum Academy (SQA)

Employment
Professor in QIS (Core)  
Professor  
School of Mathematical and Physical Sciences  
Macquarie University  
1 Jan 2022 → present

ARC Centre of Excellence for Engineered Quantum Systems (EQuS)  
Macquarie University  
1 Jan 2011 → present

Macquarie University Research Centre in Quantum Science and Technology  
Macquarie University  
1 Jan 2009 → present

Research outputs
Entanglement in quantum field theory via wavelet representations  
George, D. J., Sanders, Y. R., Bagherimehrab, M., Sanders, B. C. & Brennen, G. K., 26 Aug 2022, In: Physical Review D: covering particles, fields, gravitation, and cosmology. 106, 3, p. 036025-1-036025-19 19 p., 036025.

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Press/Media
A New Quantum Technique Could Change How We Study The Universe
Gavin Brennen
29/05/22
1 item of Media coverage

NEW TECHNIQUE INTRODUCING FOREIGN ATOMS IN OPTICAL TRAPPING ALLOWS GREATER MANIPULATION OF NANOPARTICLES
Gavin Brennen
15/11/16 → 26/12/16
2 items of Media coverage

New white paper maps the very real risks that quantum attacks will pose for Bitcoin
Gavin Brennen
1/11/17 → 9/11/17
Quantum breakthrough could lead to planet-sized telescopes
Gavin Brennen
31/05/22
1 item of Media coverage

Quantum mass radar
Gavin Brennen
1/11/17
1 item of Media coverage

TINY DIAMONDS LIGHT THE WAY FOR NEW QUANTUM TECHNOLOGIES
Gavin Brennen
31/10/17 → 1/11/17
2 items of Media coverage

Awards

Projects

AQUTE - Atomic Quantum Technologies
Brennen, G.
1/02/10 → 31/01/13

Australian Dark Matter Detector for High Mass Axions
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Brennen, G.
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Mid-level high performance computing (HPC) facility to increase the impact of theoretical output
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1/01/09 → 31/12/09

New particle physics on a table top: quantum braiding, quantum computing, and beyond
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16/06/14 → 7/10/16

Quantum algorithms for computational physics
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1/01/16 → 20/09/19

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Menicucci, N. C., Brennen, G. & Kempf, A.
23/03/20 → 22/03/23
Quantum Science and Technology (QSciTech)
Molina-Terriza, G., Twamley, J., Shparlinski, I., Town, G., Gilchrist, A., Brennen, G., Steel, M., Cresser, J., Rabeau, J., Terno, D., Brown, L., Bulger, D., Rebic, S. & Marshall, G.
1/01/09 → 31/12/16

SQA : SQA Career Development Fund - Round 4
Brennen, G.
1/07/21 → 30/06/25

Sydney Quantum Academy PhD Top-Up Scholarship_Brennen/Wagner
Brennen, G. & Wagner, E.

Sydney Quantum Academy PhD Top-Up Scholarship_Burgarth/Hahn
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1/03/20 → 31/03/24

Sydney Quantum Academy Scholarship Brennen / Vedl
Brennen, G.
1/10/22 → 30/09/26

Topologically ordered quantum media: unveiling new physics in the collective
Brennen, G.
1/01/13 → 30/06/13

Understanding topological matter: A pathway to robust quantum computation
Singh, S. & Brennen, G.
1/07/12 → 31/12/13