

Professor Nicole F. Bell

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RESEARCH FOCUS

Theoretical particle and astroparticle physics, with particular focus on dark matter, neutrino physics, the cosmological matter-antimatter asymmetry, and related topics in particle astrophysics.

EDUCATION

2001 Doctor of Philosophy, Physics, The University of Melbourne
Neutrino Oscillations and the Early Universe

1997 Bachelor of Science (Honours), The University of Melbourne

CURRENT APPOINTMENTS

2025 – onward *College of Experts*, Australian Research Council

2023 – onward *President*, The Australian Institute of Physics

2023 – onward *Editorial Board*, Physical Review Letters

2020 – onward *Leader, Theory Program*, ARC Centre of Excellence for Dark Matter Particle Physics

2020 – onward *Professor*, School of Physics, The University of Melbourne

PREVIOUS APPOINTMENTS

2021 – 2023 *Vice President*, The Australian Institute of Physics

2020 – 2021 *Melbourne Node Manager*, ARC Centre of Excellence for Dark Matter Particle Physics

2011 – 2018 *Chief Investigator*, ARC Centre of Excellence for Particle Physics at the Terascale

2014 – 2019 *Associate Professor and Reader*

2012 – 2018 *Australian Research Council Future Fellow*

2008 – 2013 *Senior Lecturer*

2007 – 2008 *Lecturer*
School of Physics, The University of Melbourne

2004 – 2006 *Sherman Fairchild Postdoctoral Scholar in Theoretical Physics*
Kellogg Radiation Laboratory and Theoretical Astrophysics group
California Institute of Technology (Caltech) USA

2001 – 2004 *Research Associate in Theoretical Astrophysics*
Fermi National Accelerator Laboratory (Fermilab) USA

Associate Fellow, Center for Cosmological Physics, University of Chicago (from 2002)
Visiting Scholar, Dept. Astronomy and Astrophysics, University of Chicago

2001 – 2001 *ARC Australian Postdoctoral Fellow*, School of Physics, The University of Melbourne

Career interruptions: Parental leave due to birth of children in 2006, 2009 & 2011. Part-time work 2012 – 2017.

PROFESSIONAL AFFILIATIONS

Fellow of the American Physical Society
Fellow of the Australian Institute of Physics

HONOURS & AWARDS

2020	Nancy Millis Medal, <i>Australian Academy of Science</i>
2020	Fellow of the Australian Institute of Physics
2016	Fellow of the American Physical Society
2012 – 2018	Future Fellowship, <i>Australian Research Council</i>
2011	Dean's Award for Excellence in Research, <i>Faculty of Science, The University of Melbourne</i>
2006	Michelson Postdoctoral Prize Lectureship, <i>Case Western Reserve University</i>
2004 – 2006	Sherman Fairchild Postdoctoral Scholar, <i>Caltech Prize Fellowship in Theoretical Physics</i>
2004	Alvin Tollestrup Award for Postdoctoral Research, <i>Fermi National Accelerator Lab.</i>
2002	Young Researchers Competition in Honor of John Archibald Wheeler – Second Prize, <i>Science & Ultimate Reality Symposium, Princeton</i>
2002	Chancellor's Prize, <i>Thesis award, The University of Melbourne</i>
2001	Bragg Gold Medal for Excellence in Physics, <i>Australian Institute of Physics award for the best physics PhD thesis at an Australian university</i>
2001	Australian Postdoctoral Fellowship, <i>Australian Research Council</i>
1999	Jean Gilmore/Thenie Baddams grant, <i>Travel grant, Aust. Federation of University Women</i>
1999	Melbourne Abroad Scholarship, <i>Travel scholarship, The University of Melbourne</i>
1998	Helen M. Schutt Scholarship, <i>Highest ranked female student beginning a science PhD at the University of Melbourne</i>
1998 – 2000	Australian Postgraduate Award, <i>PhD scholarship</i>
1997	John Tyndall Scholarship, <i>The University of Melbourne</i>
1997	Professor Kernot Scholarship in Physics, <i>The University of Melbourne</i>
1996	Bryan Scholarship in Natural Science, <i>The University of Melbourne</i>
1994 – 1997	Dean's Honours List, <i>The University of Melbourne</i>

MEDIA & OUTREACH (selected) with links to articles or videos:

2024	Public lecture – Hobart, Tasmania: <i>The Hidden Universe: Neutrinos and Dark Matter</i>
2024	Pursuit article: Dark Matter might be 'Light'
2024	Phys.Org article: Neutron stars are key to understanding dark matter
2024	Interview on 3RRR radio program Einstein A Go-Go , about neutrinos and dark matter
2023	Panel discussion: National Science Priorities, AIP/Australian Academy of Science
2023	Opening plenary talk, STEM Enrichment Academy , Flinders U., supporting girls in STEM
2023	Opening keynote address, inSTEM conference for underrepresented groups in STEM
2023	Cosmos article: Searching for the neutrino floor: Why matter matters
2023	Physics World podcast: Pondering the mysteries of dark matter
2023	ANZAAS Science talk (public lecture): <i>Detecting the Dark Universe</i>
2023	Physics World article: Ask me anything: Collaboration is the norm
2023	Cosmos article: 50 women at the cutting edge of science in Australia
2023	Interview on ABC Radio <i>Victorian Evenings</i>
2023	SBS News article: Australian scientist pushing for more girls to work in physics
2023	Canberra Times article: Dark matter expert shines light on female STEM shortage
2023	Public outreach talk: Quantum Physics in the Pub
2022	Public Lecture – July Lecture in Physics: Quantum foundations of the Universe
2022	Interview on 3RRR radio program Einstein A Go-Go
2022	Panel discussion, World Science Festival Brisbane: The Elusive Darkness of the Universe
2021	Pursuit article: Using Neutron Stars to Detect Dark Matter
2021	The Conversation article: Preprints are how cutting-edge science circulates
2020	APS Physics Magazine: Theorists React to Potential Signal in Dark Matter Detector
2020	Millis Medal video: What is dark matter?
2018	Public Lecture – July Lecture in Physics: The Rise of Cosmology and Particle Physics
2017	Panel Discussion, World Science Festival Brisbane: <i>"Collision"</i>

FUNDED GRANTS

2022 – 2024	Australian Research Council Discovery Project, DP220101727 Bell , Dolan, Beacom, <i>New Tests of Fundamental Physics and Astrophysics with Atmospheric Neutrinos</i> , \$432,195.
2020 – 2027	ARC Centre of Excellence for Dark Matter Particle Physics, CE200100008 Barberio, Bell , Dolan, Taylor, Urquijo, Volkas, Lane, Simenel, Stuchbery, Wallner, Hill, Jackson, Thomas, White, Williams, Duffy, Mould, Boehm, Goryachev, Tobar. \$35,000,000.
2019 – 2021	Australian Research Council Discovery Project, DP190102530 Bell , <i>Dark Matter Interactions</i> , \$450,000. (Relinquished in 2020 due to the award of a Centre of Excellence.)
2017 – 2019	Australian Research Council Discovery Project, DP170104382 Dolan, Bell , Volkas, Ramsey-Musolf, <i>The origin of (dark) matter</i> , \$237,000.
2016	Faculty of Science Research Grant Support Scheme Volkas, Bell , Dolan, <i>The origin of (dark) matter</i> , \$33,000.
2012 – 2018	Future Fellowship, Australian Research Council, FT120100110 Bell , <i>Frontiers in Particle and Astroparticle Physics</i> , \$556,928.
2011 – 2018	ARC Centre of Excellence for Particle Physics at the Tera-Scale, CE1100010004 Taylor, Gherghetta, Thomas, Varvell, Yabsley, Volkas, Balazs, Bell , Barberio, Sevier, Williams, Young, Limosani. \$25,200,000.
2010 – 2012	Australian Research Council Discovery Project, DP1092527, Bell , Beacom, <i>Discovering New Particle Physics with Dark Matter and Astrophysical Neutrinos</i> , \$180,000.
2009 – 2011	Australian Research Council Discovery Project, DP0988343, Volkas, Bell , Gherghetta, McKellar, Joshi, <i>The Standard Model of Particle Physics and Beyond in the era of the Large Hadron Collider</i> , \$620,000. (Relinquished in 2011 due to the award of a Centre of Excellence.)
2008	Early Career Researcher grant Bell , <i>Neutrino Decay in Cosmology and Astrophysics</i> , \$20,000.
2007	Melbourne Research Grant Scheme Bell , <i>Intersections of Particle Physics with Cosmology and Astrophysics</i> , \$12,964.
2001	Australian Research Council Australian Postdoctoral Fellowship, F00102922 Bell , <i>Neutrino Phenomenology and Particle Physics beyond the Standard Model</i>

OTHER RESEARCH INCOME

2019	Research Agreement with Defence Science & Technology Group (DST) Bell and Dolan, <i>Implications of Recent Developments in Particle Physics</i>
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COLLABORATION MEMBERSHIP

2024 – present	XLZD collaboration, Institutional Board member
2022 – present	DARWIN collaboration, PI <i>A next-generation liquid-xenon observatory for dark matter and other rare interactions</i>
2022 – present	CYGNUM-Oz collaboration, Institutional Board representative <i>A directional-detection project, for dark matter and neutrino physics applications</i>

ADVISORY ROLES

Editorial Boards:

2023 – present	Divisional Associate Editor, <i>Physical Review Letters</i>
2021 – present	Editorial Board, <i>Physica Scripta</i> (IOP publishing)
2019 – present	Editorial Board, <i>Universe</i> (MDPI)
2015 – 2024	Editorial Board, <i>Scientific Reports</i> (Nature Publishing Group)
2018 – 2021	Advisory Panel, <i>Physica Scripta</i> (IOP publishing)

Grant reviewing:

2025 –	College of Experts, Australian Research Council
2024	Reviewer, UK Research and Innovation
2022	Reviewer, Royal Society fellowships, UK
2022 – present	Reviewer, Research Grants Council of Hong Kong
2018	Reviewer, Research Corporation for Science Advancement grants, USA
2016 – present	Reviewer, Millennium Science Initiative grants, National Agency for Research & Dev., Chile
2007 – present	Reviewer, NSF (National Science Foundation, USA) grant proposals
2007 – present	Assessor, ARC (Australian Research Council) grant proposals

Manuscript refereeing:

2021 – present	Referee, SciPost
2021 – present	Referee, Publications of the Astronomical Society of Australia
2021 – present	Referee, Journal of Physics Communications
2013 – present	Referee, Astroparticle Physics
2012 – present	Referee, Symmetry
2009 – present	Referee, Astronomy & Astrophysics
2008 – present	Referee, Journal of Cosmology and Astroparticle Physics
2007 – present	Referee, Journal of Physics G
2006 – present	Referee, Reviews of Modern Physics
2004 – present	Referee, Journal of High Energy Physics
2003 – present	Referee, Physical Review D
2002 – present	Referee, Physical Review Letters
2001 – present	Referee, Physics Letters B

Personnel review:

2016 – present	External referee for promotion and tenure-review cases at various institutions worldwide
2006 – present	Member of hiring panels, permanent and fixed-term positions at various Aust. Universities
2018 – 2022	Chair of performance review panels for level A – D physics staff, U. Melbourne

NATIONAL/INTERNATIONAL COMMITTEES

2023 – present	President, The Australian Institute of Physics (AIP)
2023 – present	Council Member, Association of Asia Pacific Physical Societies (AAPPS)
2021 – present	Member, National Committee for Physics (NCP) of the Australian Academy of Science
2021 – present	Member, Commission 11: Particles and Fields, International Union of Pure and Applied Physics (IUPAP)
2021 – present	Member, Steering Committee, Joint AIP/ASA Group for Astroparticle Physics (GAP)
2021 – 2022	Vice President, The Australian Institute of Physics (AIP)
2019	Co-convenor, Non-accelerator physics working group, Australian Particle Physics Strategy
2010 – present	General Assembly Member, Asia-Pacific Organization for Cosmology and Particle Astrophysics (APCosPA)
2008 – present	Treasurer/Secretary, Australian Institute for High Energy Physics (AUSHEP)

LOCAL COMMITTEES

2020 – 2024	Member, Research Committee, Faculty of Science
2020	Member, Selection panel for Laby Professorship in Physics
2019 – 2021	Member (Academic Board rep), Course Standing Committee, Bachelor of Agriculture
2019	Chair, Workforce Planning Group, School of Physics
2019	Chair, Selection panel for fixed-term Lecturer in Quantum Computing
2018 – present	Member, Academic Board, University of Melbourne
2018 – 2022	Chair, Triennial performance review panels for level A – D staff, School of Physics
2017 – 2024	Chair, Research & Research Training Committee, School of Physics
2017 – 2024	Member, Executive Committee, School of Physics
2017 – present	Member, Equity and Diversity committee, School of Physics
2017 – 2019	Member, Research and Industry Committee, Faculty of Science
2017 – 2019	Scholarship and Awards Coordinator, Selection Procedures Committee of Academic Board
2017 – 2018	Member, Selection panel, Haimson Lectureship in Physics
2017	Reviewer, SPC Selection Review of Faculty of Engineering
2017	Member, Workforce Planning Group, School of Physics
2016	Member, Selection panel, lectureship in experimental particle physics
2016	Member, SPC working group on Mathematics Pathways
2015 – 2018	Member, Level C Promotion Panel, Faculty of Science
2015 – 2016	Member, Diversity and Inclusion Committee, Faculty of Science
2014	Member, Selection panel, Lectureship in theoretical particle physics
2011 – 2019	Member, Selection Procedures Committee (subcommittee of Academic Board)
2011	Member, Melbourne Graduate School of Science Academic Program Committee
2010 – 2012	Equal Opportunity Observer on academic promotion panels
2008 – 2009	Member, Science Faculty selection panel for the Chancellor's Prize
2007 – 2011	Coordinator, Masters, Honours and Postgraduate Diploma programs, School of Physics
2007 – 2011	Member, Research & Research Training Committee, School of Physics
2008	Member, Academic Programs Committee, School of Physics
2007 – present	Member or Chair of numerous PhD advisory panels
2006 – present	Member or Chair of numerous selection panels for research associates in Particle Physics
2006	Member, Selection panel, Lectureship in Theoretical Particle Physics
2005 – 2006	Journal club organiser, Kellogg Lab, Caltech
2002 – 2003	Seminar organiser, Theoretical Astrophysics, Fermi National Accelerator Lab

OTHER SERVICE AND COMMITTEES

External referee for promotion and tenure-review cases at various institutions worldwide.

PhD thesis examiner for multiple institutions in Australia and internationally.

Member or chair of selection panels for numerous prizes and awards.

Member of numerous hiring panels for continuing and fixed-term positions at various Australian universities.

TEACHING

2019 – present	PHYC90008 Quantum Field Theory (MSc level)
2011 – present	PHYC90011 Particle Physics (MSc level)
2009 – 2011	PHYC90007/640-610 Quantum Mechanics (MSc level)
2009 – 2011	PHYC20010/640-214 Quantum Physics & Special Relativity Advanced (2nd year ugrad)
2007 – 2008	640-223 Quantum Mechanics & Thermal Physics, Advanced (2nd year undergraduate level)
2008, 2010	640-112 Physics 2, Advanced (1st year undergraduate level)
2008	Quantum Mechanics B (4th year/Honours level)
2007	640-122 Physics 2, Advanced (1st year undergraduate level)
2007 – 2011	Masters, Honours and Postgraduate Diploma coordinator

POSTDOCTORAL FELLOWS MENTORED

2024 – present	Avirup Ghosh
2022 – present	Stephan Meighen-Berger
2020 – present	Jayden Newstead
2019 – 2023	Michael Baker (→ Faculty at UMass Amherst, USA)
2017 – 2021	Sandra Robles (→ Postdoc at Kings College London, UK → Postdoc at Fermilab, USA)
2015 – 2018	Zhao-Huan Yu (→ Faculty at Sun Yat-sen University, China)
2015 – 2018	Giorgio Busoni (→ Postdoc, Max Planck Institute Heidelberg, Germany → Postdoc, ANU)
2015 – 2018	Tyler Corbett (→ Postdoc at Niels Bohr Institute, Copenhagen, Denmark)
2012 – 2017	Yi Cai (→ Faculty at Sun Yat-sen University, China)
2013 – 2014	Anibal Media (→ Postdoc at IPhT Saclay, France → Faculty at La Plata U., Argentina)
2009 – 2012	Kalliopi Petraki (→ Postdoc at NIKHEF, Amsterdam → Faculty at Sorbonne, France)

RESEARCH STUDENTS SUPERVISED

PhD students

2023 – present	Iman Shaukat Ali
2021 – present	Alex Ritter
2020 – present	Michael Virgato
2019	Michael Nee (→ PhD at Oxford, UK)
2017 – 2021	Isaac Sanderson (→ Industry)
2016 – 2021	Leon Friedrich (→ Postdoc at UMass Amherst & TD Lee Institute, China)
2015	Alexander Miller (→ PhD at Max Planck Institute, Munich)
2013 – 2017	Rebecca Leane (→ Postdoc at MIT, USA → Faculty at SLAC, USA)
2012 – 2016	Amelia Brennan (→ data science (declined a postdoc position))
2011 – 2015	Iason Baldes (→ Postdoc at DESY, Germany → Postdoc Brussels U.)
2009 – 2013	Ahmad Galea (→ Postdoc at University of Oslo, Norway)
2007 – 2011	Thomas Jacques (→ Postdoc at Arizona State University, USA → postdoc at University of Geneva, Switzerland → Postdoc at SISSA, Italy)
2007 – 2008	Sandy Law (→ Postdoc at NCKU University, Taiwan)

MSc students

2024 – present	Eden Isaac
2023 – present	Ho Man Yim
2023 – present	Michael Verde
2021 – 2022	Iman Shaukat Ali
2018 – 2019	Michael Virgato
2017 – 2019	Clarisse Thomas
2017 – 2018	Michael Nee
2015 – 2018	Benjamin Graham
2015 – 2016	Isaac Sanderson
2013 – 2015	Alexander Miller
2010 – 2011	Amelia Brennan
2009 – 2010	Iason Baldes

Honours students

2008	Ahmad Galea
2007	Alexander Malone

CONFERENCE ORGANISATION

- 2025 Convenor, Nuclear Astrophysics, INPC2025, *International Nuclear Physics Conference*, Daejeon, Korea, 25 – 30 May 2025
- 2024 Local Organising Committee, *25th Australian Institute of Physics Congress*, Melbourne, 1 – 6 December 2024
- 2024 Scientific Program Committee, CEPC2024, *International Workshop on the High Energy Circular Electron Positron Collider (European Edition)*, Hangzhou, China, October 23-27, 2024
- 2024 Scientific Advisory Committee, NOW 2024, *Neutrino Oscillation Workshop*, Otranto, Italy, 2 – 8 September 2024
- 2024 Regional committee, QCHSC2024, *XVIth Quark Confinement and the Hadron Spectrum Conference*, Cairns, 19 – 24 August 2024
- 2024 Scientific Program Committee, *International Workshop on the High Energy Circular Electron Positron Collider (European Edition)*, Marseille, France, 8 – 13 April 2024
- 2023 Local Organising Committee, CYGNUS 2023, *8th International Workshop on Directional Recoil Detection*, Sydney, 11 – 15 December 2023
- 2023 International Advisory Committee, APPW23, *Asia Pacific Physics Week*, online, 6 – 10 Nov 2023
- 2023 Scientific Program Committee, CEPC2023, *International Workshop on the High Energy Circular Electron Positron Collider*, Nanjing, China, 23 – 27 Oct 2023
- 2022 Local Organising Committee, *24th Australian Institute of Physics Congress*, Adelaide, 11 – 16 December 2022
- 2022 Scientific Program Committee and Theory co-chair, CEPC2022, *International Workshop on the High Energy Circular Electron Positron Collider*, Nanjing, China, 24 – 28 October 2022
- 2022 Scientific Advisory Committee, NOW 2022, *Neutrino Oscillation Workshop*, Rosa Marina, Italy, 4 – 11 September 2022
- 2021 Scientific Program Committee, CEPC2021, *Circular Electron Positron Collider International Workshop*, Nanjing, China, 8 – 12 November 2021
- 2021 Organising Committee, *Unveiling Hidden Physics Beyond the Standard Model at the LHC*, CERN, Geneva (virtual workshop), 1 – 3 March 2021
- 2020 Scientific Program Committee, CEPC2020, *Circular Electron Positron Collider International Workshop*, Shanghai, China, 26 – 28 October 2020
- 2020 Scientific Advisory Committee, NOW 2020, *Neutrino Oscillation Workshop*, Rosa Marina, Italy, September 2020 (conference cancelled due to covid-19 pandemic)
- 2019 Organising committee, TeVPA 2019, *TeV Particle Astrophysics conference*, Sydney, 2 – 6 Dec 2019
- 2019 Convener, Direct and Indirect Dark Matter Searches, *Gordon Research Conference on Particle Physics: New Tools for the Next Generation of Particle Physics and Cosmology*, Hong Kong, 30 Jun – 5 Jul 2019
- 2019 International Advisory Committee, WIN2019, *27th International Workshop on Weak Interactions and Neutrinos*, Bari, Italy, 3 – 8 June 2019
- 2017 Chair of the Nuclear, Particle and Plasma Physics stream at the *Annual Meeting of the Australian Institute of Physics*, 3 – 7 December 2017
- 2017 Convener, Particle Physics track, TEVPA 2017, *TeV Particle Astrophysics conference*, Columbus, Ohio, USA, 7 – 11 August 2017
- 2017 International Advisory Committee, WIN2017, *26th International Workshop on Weak Interactions and Neutrinos*, Irvine California, 18 – 24 June 2017
- 2017 Organizing committee, *CAASTRO-CoEPP workshop*, Melbourne, January 2017
- 2016 International Advisory Committee, CosPA 2016, *13th Asia-Pacific Symposium on Cosmology and Particle Astrophysics*, Sydney, 28 November – 2 December 2016,
- 2016 International Advisory Committee, INSS 2106, *International Neutrino Summer School*, Quy-Nhon, Vietnam, 18 – 29 July 2016
- 2016 Local organizing committee, SUSY 2016, *International Conference on Supersymmetry and Unification of Fundamental Interactions conference*, Melbourne, 3 – 8 July 2016
- 2016 Chair, *pre-SUSY summer school*, Melbourne, 27 June – 1 July 2016
- 2015 Organizing committee, *CoEPP Summer School*, Monash, Feb 2015
- 2014 International Advisory Committee and Local Organizing Committee, CosPA 2014, *11th Asia-Pacific Symposium on Cosmology and Particle Astrophysics*, Auckland, 9 – 12 December 2014
- 2012 Local organising committee and proceedings editorial committee, ICHEP 2012, *36th International Conference on High Energy Physics*, Melbourne, 4 – 11 July 2012.
- 2012 Convener, “Cosmic Frontier” parallel sessions, CIPANP2012, *11th Conference on the Intersections of Particle and Nuclear Physics*, Florida, USA, 29 May – 3 June 2012

- 2010 Program Committee, *Australian Institute of Physics Congress*, Melbourne, 5 – 9 December 2010
- 2009 Co-organizer, CosPA 2009, *International Symposium on Cosmology and Particle Astrophysics*, Melbourne, 18 – 20 November 2009
- 2009 Local organising committee, DSU09, *5th International Workshop on the Dark Side of the Universe*, Melbourne, 1 – 5 June 2009
- 2008 Convener, Particle Astrophysics session, TeVPA 2008, *TeV Particle Astrophysics conference*, Beijing, China, 24 – 28 Sep 2008
- 2008 Organising committee, *Heavy Quarks and Leptons*, Melbourne, 5 – 9 June 2008
- 2008 Co-chair, *Melbourne Neutrino Theory Workshop*, Melbourne, 2 – 4 June 2008
- 2006 Co-convener, Neutrino Physics, *Joint Meeting of Pacific Region Particle Physics Communities: APS Division of Particles and Fields (DPF2006) & the Japan Physical Society (JPS2006)*, Honolulu, Hawaii, USA, 29 October – 3 November 2006
- 2002 Co-chair, *Neutrino News from the Lab and the Cosmos*, Fermilab, USA, 17 – 19 October 2002

INVITED CONFERENCE TALKS

1. *Capture, Thermalization and Annihilation of Dark Matter in Neutron Stars*
Plenary talk, International Joint Workshop on the Standard Model and Beyond 2024 & 3rd Gordon Godfrey Workshop on Astroparticle Physics, UNSW, Sydney, December 2024
2. *Round Table: QCD & new physics in extreme astrophysical environments - in neutron stars & their mergers*
Invited chair & speaker, XVIth Quark Confinement and the Hadron Spectrum Conference, Cairns, 23 August 2024
3. *Capture, Thermalization and Annihilation of Dark Matter in Neutron Stars*
Invited talk, XVIth Quark Confinement and the Hadron Spectrum Conference, Cairns, 19 August 2024
4. *Physics Prospects of Future Dark Matter Searches*
Plenary talk, ICHEPAP2023, International Conference on High Energy Particle & Astroparticle Physics, India (*online talk*), 15 December 2023.
5. *Overview of Dark Matter*
Plenary talk, CYGNUS 2023, 8th International Workshop on Directional Recoil Detection, Sydney, 11 December 2023.
6. *Dark Matter Searches with Astrophysics*
Plenary talk, TAUP 2023, 18th International Conference on Topics in Astroparticle and Underground Physics, Vienna, Austria, 30 August 2023.
7. *Theoretical Perspective on Dark Matter Searches*
Plenary talk, Lepton-Photon 2023, 31st International Symposium on Lepton Photon Interactions at High Energies, Melbourne, Australia, 20 July 2023.
8. *The Capture of Dark Matter in Stars*
Invited talk, CosPA 2022, International Symposium on Cosmology & Particle Astrophysics, APCTP Korea and online hybrid meeting (*online talk*) 30 November 2022.
9. *Dark Matter Signals in Hyper-Kamiokande*
Plenary talk, International Conference on Neutrinos and Dark Matter, Egypt/online (*online talk*), 28 Sep 2022.
10. *Searching for Dark Matter with Hyper-Kamiokande*
Plenary talk, DMNet International Symposium on Direct and Indirect Detection of Dark Matter, Heidelberg, Germany (*online talk*), 13 September 2022.
11. *Dark Matter Capture in Neutron Stars*
Parallel talk, APPC15, 15th Asia Pacific Physics Conference, Nuclear Physics stream, South Korea (*online talk*), 22 Aug 2022.
12. *Searching for Dark Matter with Hyper-Kamiokande*
Invited talk, Advances in Subatomic Physics workshop, Cairns, 19th July 2022.
13. *Searching for Dark Matter Scattering, on Earth and in the Stars*
Plenary talk, First Pan-African Astro-Particle and Collider Physics Workshop (*online talk*), 22 March 2022.
14. *The Capture of Dark Matter in Stars*
Invited lecture, Nuclear and Particle Physics Stream, Australian Institute of Physics Summer Meeting, Brisbane, Australia (*online talk*), 7 December 2021.

15. *Dark Matter Capture in Stars*
Plenary talk, 2021 CERN-CKC Theory Workshop: BSM physics towards the end of the pandemic, South Korea (*online talk*), 8 June 2021.
16. *Heating up Neutron Stars with Dark Matter*
Plenary talk, Astrophysics workshop, Asia Pacific Center for Theoretical Physics, Pohang, South Korea, (*online talk*) 17 November 2020.
17. *Dark Matter Capture in Neutron Stars*
Plenary talk, DM@LHC 2020, 7th Dark Matter @ LHC Workshop, Hamburg, Germany (*online*) 4 Jun 2020.
18. *Capture of Dark Matter in Neutron Stars*
Plenary talk, TeVPA2019, TeV Particle Astrophysics Conference, Sydney, Australia, 2 December 2019.
19. *Astroparticle Physics: On the Capture of Dark Matter in Stars*
Plenary talk, SUSY2019, XXVIIth International Conference on Supersymmetry and Unification of Fundamental Interactions, Texas A&M University – Corpus Christi, Texas, USA, 23 May 2019.
20. *Heating up Neutron Stars with Dark Matter*
Plenary talk, Mitchell Conference on Collider, Dark Matter and Neutrino Physics, Texas A&M University – College Station, Texas, USA, 16 May 2019.
21. *Simple (but not too simple) descriptions of particle dark matter*
Parallel talk, Australian Institute of Physics Congress, Nuclear & Particle Physics stream, Perth, 13 Dec 2018.
22. *Heating up Neutron Stars with Dark Matter*
Parallel talk, Australian Institute of Physics Congress, Dark Matter Focus Session, Perth, 12 Dec 2018.
23. *Dark Matter: Minimal Self-Consistent Simplified Models and Beyond*
Plenary talk, CosPA2017, International Symposium on Cosmology & Particle Astrophysics, Kyoto, Japan, 12 December 2017.
24. *Matter-Antimatter Asymmetry of the Universe*
Plenary Talk, A Fractured Universe? Fundamental Physics, Symmetry and Life, U. Sydney, 30 Nov 2017.
25. *Unitarity and Dark Matter: Implications for collider searches and indirect detection*
Plenary talk, 12th International Workshop on the Dark Side of the Universe, Bergen, Norway, 28 July 2016.
26. *The Particle Physics of Dark Matter and Beyond*
Plenary talk, 8th Australasian Conference on General Relativity and Gravitation, Monash U., 3 Dec 2015.
27. *Particle – Antiparticle Asymmetries from Scattering*
Plenary talk, PACIFIC 2015, Particle Astrophysics and Cosmology, Including Fundamental Interactions, French Polynesia, 17 September 2015.
28. *Dark Matter in the Universe*
Plenary talk, Rencontres du Vietnam 2014: Physics at the LHC & Beyond, Quy-Nhon, Vietnam, 16 Aug 2014.
29. *Dark Matter: Theory Overview*
Plenary talk, CosPA2013, 10th International Symposium on Cosmology and Particle Astrophysics, Hawaii, 12 November 2013.
30. *Dark Matter: Indirect Detection and LHC Searches*
Plenary talk, LHC, Particle Physics and the Cosmos conference, Auckland, New Zealand, 13 July 2012.
31. *Indirect Detection of Dark Matter – Recent Developments*
Plenary talk, 2011 Phenomenology Symposium, University of Wisconsin at Madison, USA, 10 May 2011.
32. *Indirect Detection of Particle Dark Matter*
Parallel talk, Australian Inst. Physics Congress, Nuclear and Particle Physics stream, Melbourne, Dec 2010.
33. *Dark Matter Annihilation with Electroweak Bremsstrahlung*
Parallel talk, CosPA/COSMO 2010, Tokyo, Japan, September 2010.
34. *Dark Matter Annihilation to Electrons, Neutrinos and Gamma Rays*
Parallel talk, CIPANP 2009, 10th Conference on the Intersections of Particle and Nuclear Physics, San Diego, California, USA, 28 May 2009.
35. *Dark Matter Annihilation*
Plenary talk, PPC09, 3rd International Workshop in the Interconnection between Particle Physics and Cosmology, University of Oklahoma, USA, 20 May 2009.

36. *Dark Matter Annihilation to Electrons, Neutrinos and Gamma Rays*
Plenary talk, DARK 2009, 7th International Heidelberg Conference on Dark Matter in Astro and Particle Physics, Christchurch, New Zealand, 20 January 2009.
37. *Constraining Dark Matter Annihilation with Neutrinos and Gamma Rays*
Parallel talk, CosPA 2008, International Symposium on Cosmology and Particle Astrophysics, Asia Pacific Center for Theoretical Physics, Korea, 30 October 2008.
38. *Probing New Physics with Astrophysical Neutrinos*
Plenary talk, Neutrino 2008, XXIII International Conference on Neutrino Physics and Astrophysics, Christchurch, New Zealand, 30 May 2008.
39. *Dark Matter Annihilation in the Late Universe*
Parallel talk, CosPA2007, International Symposium on Cosmology and Particle Astrophysics, National Taiwan University, 15 November 2007.
40. *Neutrinos in Cosmology*
Plenary talk, Gordon Research Conference on Nuclear Physics, Newport RI, USA, 16 July 2007.
41. *Neutrino Astrophysics Panel Discussion*
Panel discussion, Bethe Centennial Symposium on Astrophysics, Cornell University, 2 June 2006.
42. *Highlights of Neutrinos in Cosmology*
Plenary talk, April Meeting of the American Physical Society, Dallas, Texas, 24 April 2006.
43. *Magnetic Moments of Dirac Neutrinos*
Parallel talk, PANIC 05, Particles and Nuclei International Conference, Santa Fe, NM, 27 Oct 2005.
44. *Cosmological Signatures of Neutrino Interactions*
Plenary talk, Santa Fe Summer Workshop, Implications of Neutrino Flavor Oscillations, 12 Jul 2005
45. *Neutrino Signatures in Cosmology*
Plenary talk, Workshop on Exploring the Physics Frontier at the Deep Underground Laboratories, Institute for Nuclear Theory, Seattle, 24 June 2005.
46. *Neutrino Signatures in Cosmology*
Parallel talk, Frontiers in Contemporary Physics III, Vanderbilt University, 26 May 2005.
47. *Galactic Positrons and MeV Dark Matter*
Parallel talk, Frontiers in Contemporary Physics III, Vanderbilt University, 25 May 2005.
48. *Relic Neutrino Abundance and Cosmological Neutrino Mass Limits*
Plenary talk, Fermilab Annual Users' Meeting, 2 June 2004.
49. *Neutrino Astrophysics: Theoretical Overview*
Parallel talk, WIN 03, 19th International Workshop on Weak Interactions and Neutrinos, Lake Geneva, Wisconsin, 9 October 2003.
50. *Neutrino Mixing and Cosmology*
Parallel talk, TAUP 2003, Eighth International Conference on Topics in Astroparticle and Underground Physics, University of Washington, Seattle, 5 September 2003.
51. *Cosmological Connections of Neutrino Physics*
Plenary talk, Workshop on Trends in Neutrino Physics, Argonne National Laboratory, 13 May 2003.
52. *Neutrino Mixing and Big Bang Nucleosynthesis*
Parallel talk, American Physical Society Meeting, Philadelphia, 7 April 2003.
53. *The Universe's Lepton Number*
Plenary talk, Neutrinos: Data, Cosmos, and Planck Scale conference, Kavli Institute for Theoretical Physics (KITP) UC Santa Barbara, 7 March 2003.
54. *Neutrinos and Cosmology*
"Starry Messages" lecture series, Fermilab, 24 October 2002.
55. *Cosmological Lepton Number Constraints from Neutrino Flavour Transformation*
Parallel talk, COSMO-02, Int. Workshop on Particle Physics and the Early Universe, Chicago, 19 Sep 2002.
56. *Neutrino Oscillations and the Early Universe -- the Quantum Mechanics of Open Systems*
Bragg Lecture (plenary talk), Aust. Institute Physics Congress, Sydney, Australia, 10 July 2002.

57. *Coherence, Decoherence and Oscillating Neutrinos -- from Quantum Zeno to Getting in Sync*
Science & Ultimate Reality Symposium -- Young Researchers Competition in Honor of John Archibald Wheeler, Princeton, 17 March 2002.
58. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis in a 4 Neutrino Model*
Parallel talk, NuFact'01, Third International Workshop on Neutrino Factories based on Muon Storage Rings, Tsukuba, Japan, 29 May 2001.

INVITED COLLOQUIA & SEMINARS, AND CONTRIBUTED CONFERENCE TALKS

1. *Searching for Dark Matter, on Earth and in the Stars*
Physics Colloquium, University of Tasmania, 21 June 2024
2. *Dark Matter*
Lectures at the Canberra International Physics Summer School (CIPSS23), January 17 – 19 January 2023
3. *Detecting Dark Matter Annihilation to Neutrinos*
DSU2022, 16th International Workshop on the Dark Side of the Universe, Sydney, 6 December 2022
4. *Searching for Dark Matter Scattering, on Earth and in the Stars*
Colloquium, University of Queensland, 31 August 2022
5. *Dark Matter Signals in Hyper-Kamiokande*
Seminar, University of Queensland, 30 August 2022
6. *Searching for Light Dark Matter*
Seminar, Institute for Nuclear Theory, U. Washington, Seattle, Workshop on Dark Matter in Compact Objects, Stars, and in Low Energy Experiments, 4 August 2022 (*online talk*)
7. *Searching for Dark Matter Scattering, on Earth and in the Stars*
Seminar, AIP Theoretical Physics Seminar Series, 30 June 2022 (*online talk*)
8. *Searching for Dark Matter Scattering, on Earth and in the Stars*
Colloquium, School of Physics, UNSW Sydney, 2 June 2022
9. *Searching for Dark Matter Scattering, on Earth and in the Stars*
Seminar, High Energy Physics Department, U. Campinas, Sao Paulo, Brazil, 26 May 2022 (*online talk*)
10. *Searching for Dark Matter Scattering, on Earth and in the Stars*
Colloquium, Department of Physics, University of Adelaide, 20 May 2022
11. *Dark Matter Capture in Stars*
Seminar, High Energy Theory group, Department of Physics, University of Tokyo, 13 Dec 2021 (*online talk*)
12. *Dark Matter Capture in Neutron Stars*
Brookhaven Forum 2021: Opening New Windows to the Universe, USA-online, 3 Nov 2021 (*online talk*)
13. *Dark Matter Capture in Neutron Stars*
TeVPA2021, TeV Particle Astrophysics Conference, Chengdu, China, 27 Oct 2021 (*online talk*)
14. *Dark Matter Capture in Stars*
Seminar, Centre for High Energy Physics, Indian Institute of Science, Bengaluru, India, 16 Jun 2021 (*online*)
15. *Dark Matter Capture in Stars*
Seminar, Nanjing Normal University, China, 3 June 2021 (*online talk*)
16. *Baryogenesis at Low Scale*
Australian Institute of Physics Summer Meeting, UNSW Sydney, 4 Dec 2017
17. *Direct Detection of Dark Matter via a Two-Higgs-Doublet Portal*
CAASTRO-CoEPP joint workshop, Barossa Valley, South Australia, 21 Nov 2017
18. *Dark Forces in the Sky: Signals from Z' and the Dark Higgs*
TeVPA 2017, TeV Particle Astrophysics 2017 conference, Columbus Ohio, 7 Aug 2017
19. *Enhancing Dark Matter Annihilation rates with Dark Bremsstrahlung*
TeVPA 2017, TeV Particle Astrophysics 2017 conference, Columbus Ohio, 7 Aug 2017
20. *Self-consistent Dark Matter Simplified Models with an s -channel Scalar Mediator*
LHC Dark Matter Working group, CERN Geneva (*online talk*), 15 Dec 2016
21. *Dark Forces in the Sky – Signals from Z' and the Dark Higgs*
CosPA2016, 13th Int. Symposium on Cosmology & Particle Astrophysics, University of Sydney, Nov 2016
22. *Particle – Antiparticle Asymmetries from Scattering*
CoEPP annual workshop, Torquay, Victoria, 19 Feb 2016
23. *Mono- W and Gauge Invariance*
LHC Dark Matter Working Group meeting, CERN Geneva (*online talk*), 10 Dec 2015
24. *The Particle Physics of Dark Matter and Beyond*
School of Physics Colloquium, The University of Sydney, 19 Oct 2015

25. *Dark Matter at the LHC: The Importance of Gauge Invariance*
ATLAS Astroparticle Forum, CERN Geneva (*online talk*), 7 Jul 2015
26. *Dark Matter at the LHC: The Importance of Gauge Invariance*
Gordan Research Conference – Prospects of Particle Physics at the 13 TeV LHC, Hong Kong, 10 Jun 2015
27. *Dark Matter*
Lecture at CoEPP Summer School, Monash, 16 Feb 2015.
28. *Collider Constraints on Dark Matter*
CoEPP and CAASTRO joint workshop on Dark Matter, Stawell, Victoria, 29 Sep 2014.
29. *Dark Matter and Particle Physics*
CoEPP annual workshop, Cairns, QLD, 9 Jul 2013.
30. *Neutrino physics and astrophysics*
CoEPP and CAASTRO joint workshop, The University of Melbourne, 28 Feb 2013.
31. *Indirect detection of dark matter - electroweak bremsstrahlung and other stories*
University of California at Los Angeles, USA, joint theory-experiment seminar, 18 May 2011.
32. *Indirect detection of dark matter - electroweak bremsstrahlung and other stories*
Fermi National Accelerator Laboratory, USA, Astrophysics seminar, 16 May 2011.
33. *Indirect detection of dark matter - electroweak bremsstrahlung and other stories*
The Ohio State University, USA, Particle Astrophysics Seminar, 13 May 2011.
34. *Indirect Detection of Dark Matter*
University of Queensland, Australia, Physics Colloquium, 19 Nov 2010.
35. *Indirect Detection of Dark Matter*
University of Canterbury, Christchurch, New Zealand, Physics Seminar, 2 Nov 2010.
36. *Indirect Detection of Dark Matter*
Monash University, Australia, Centre for Stellar and Planetary Astrophysics Colloquium, 26 Oct 2010.
37. *Indirect Dark Matter Detection – Robust Bounds on Annihilation to Electrons, Neutrinos & Gamma Rays*
DSU09, 5th International Workshop on the Dark Side of the Universe, Melbourne, 3 June 2009.
38. *Neutrino Magnetic Moments and Electromagnetic Leptogenesis*
CIPANP 2009, 10th Conference on the Intersections of Particle and Nuclear Physics, San Diego, California, USA, 27 May 2009.
39. *Dark Matter Annihilation to Electrons, Neutrinos and Gamma Rays*
The Ohio State University, USA, Center for Cosmology and Astroparticle Physics Seminar, 26 May 2009.
40. *Neutrino Magnetic Moments and Electromagnetic Leptogenesis*
Australian Institute of Physics 18th National Congress, Adelaide, 2 Dec 2008.
41. *Dark Matter Annihilation in the Late Universe*
TeVPA 2008, TeV Particle Astrophysics IV, Beijing, China, 24 Sep 2008.
42. *Neutrino, Dark Matter, and Beyond*
School of Physics Colloquium, The University of Sydney, 18 Aug 2008.
43. *Annihilating Dark Matter*
Dark 2007, 6th International Heidelberg Conf on Dark Matter in Astro & Particle Physics, Sydney, 27 Oct 2007.
44. *Neutrinos in Cosmology*
School of Physics Colloquium, The University of Melbourne, 9 May 2007.
45. *A General Bound on the Dark Matter Annihilation Cross Section*
XXIII Texas Symposium on Relativistic Astrophysics, Melbourne, 12 Dec 2006
46. *How Magnetic is the Neutrino?*
Festschrift in Honour of Bruce McKellar and Girish Joshi, The University of Melbourne, 30 Dec 2006.
47. *Neutrino Magnetic Moments and Galactic Positrons & Annihilating Dark Matter*
Michelson Postdoctoral Prize lecture (seminar), Case Western Reserve University, 5 May 2006.
48. *Neutrino Physics and Astrophysics: What we have learnt & what we would like to discover*
Michelson Postdoctoral Prize lecture (colloquium), Case Western Reserve University, 3 May 2006.
49. *Cosmological Neutrinos: Relic Neutrino Abundance and Neutrino Mass Constraints*
Michelson Postdoctoral Prize lecture (seminar), Case Western Reserve University, 2 May 2006.
50. *Astrophysical Neutrinos: Revealing Neutrino Properties at the Highest Energies*
Michelson Postdoctoral Prize lecture (seminar), Case Western Reserve University, 1 May 2006.
51. *Cosmic Neutrinos -- from the Highest Energies to the Lowest*
Physics Colloquium, California State University, Fresno, 4 November 2005.
52. *Topics in Particle Physics and Cosmology*
School of Physics Colloquium, The University of Melbourne, 8 April 2005.

53. *Neutrinoless Universe and MeV Dark Matter & Galactic Positrons*
University of California at San Diego, Astrophysics and Space Sciences Seminar, 2 Nov 2004.
54. *Galactic Positrons and MeV Dark Matter*
TASC 04, 4th Theoretical Astrophysics in Southern California Meeting, UC Irvine, 15 Oct 2004.
55. *Cosmic Neutrinos -- from the Highest Energies to the Lowest*
University of New Mexico, Nuclear, Particle & Astroparticle Physics Seminar, 7 September 2004.
56. *Cosmic Neutrinos -- from the Highest Energies to the Lowest*
Fermilab, Joint Experimental -- Theoretical Seminar, 20 August 2004.
57. *Cosmological Neutrino Mass Limits --- The Case of the Disappearing Relic Neutrinos*
PHENO 2004 Symposium, University of Wisconsin, Madison, 26 April 2004.
58. *Revealing Neutrino Properties via High Energy Neutrino Astrophysics*
University of California, Irvine, 16 March 2004.
59. *Revealing Neutrino Properties via High Energy Neutrino Astrophysics*
Caltech, Kellogg Seminar, 12 March 2004.
60. *Revealing Neutrino Properties via High Energy Neutrino Astrophysics*
University of Wisconsin, Madison, Cosmology and Astrophysics Seminar, 5 February 2004
61. *High Energy Astrophysical Neutrinos: Revealing Neutrino Properties with Flavour Ratio Measurements*
Los Alamos National Laboratory, T-8 seminar, 15 January 2004.
62. *High Energy Astrophysical Neutrinos: Revealing Neutrino Properties with Flavour Ratio Measurements*
Institute for Nuclear Theory, University of Washington, Seattle, 12 January 2004.
63. *High Energy Astrophysical Neutrinos: Revealing Neutrino Properties with Flavour Ratio Measurements*
School of Natural Sciences, Institute for Advanced Study, Princeton, 19 December 2003.
64. *The Universe's Lepton Number*
Argonne National Lab, Theory seminar - Physics Division, 13 March 2003.
65. *Neutrino Mixing and Big Bang Nucleosynthesis*
Indiana University, High Energy Physics and Astrophysics Seminar, 4 November 2002.
66. *Do Neutrinos Decay?*
North Carolina State University, TNT seminar, 10 September 2002.
67. *Neutrino Mixing in the Early Universe*
Workshop on Neutrino News from the Lab and the Cosmos, Fermilab, 19 October 2002.
68. *Do Solar Neutrinos Decay?*
University of Melbourne, School of Physics, Theory Seminar, 23 July 2002.
69. *Do Neutrinos Decay?*
PHENO 2002 Symposium, University of Wisconsin, Madison, 22 April 2002.
70. *Do Solar Neutrinos Decay?*
University of Delaware, Particle Theory and Astrophysics seminar, 18 April 2002.
71. *Do Solar Neutrinos Decay?*
Institute for Nuclear Theory, U. Washington, Seattle. Neutrino Masses & Mixing Workshop, 11 April 2002.
72. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis*
Ohio State University, Department of Physics, HEP/Astro Seminar, 6 March 2002.
73. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis*
Purdue University, Department of Physics, High Energy Theory Seminar, 19 February 2002.
74. *Neutrinos in the Early Universe*
"Neutrinos for fun and profit" lecture, Fermilab, 15 November 2001.
75. *Coherence and Decoherence - from Quantum Zeno to Getting in Sync*
Enrico Fermi Institute Interdisciplinary Theory Seminar, Chicago, 2 November 2001.
76. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis*
Fermilab, Theoretical Astrophysics Seminar, 22 October 2001.
77. *Synchronisation*
University of Melbourne, School of Physics, Theory Seminar, November 2000.
78. *Relic Neutrino Asymmetries*
Les Houches Summer School on "The Primordial Universe", France, July 1999.

Publication List - Nicole F. Bell

Citation Statistics

h-index = 44; Average of 67 citations per refereed journal article.

Citations statistics taken from the INSPIRE high-energy physics database at inspirehep.net, August 2024.

Submitted journal articles

1. Meighen-Berger, S.A., Newstead, J.L., Beacom, J.F., Bell, N.F. & Dolan, M.J. Enhancing DUNE's solar neutrino capabilities with neutral-current detection, arXiv:2410.00330 [hep-ph] (10 pages) (2024).
[Inspire: **0 citations**] [Google Scholar: 0 citations]

Refereed journal articles

2. Bell, N. F., Busoni, G., Robles, S. & Virgato, M. Heavy Dark Matter in White Dwarfs: Multiple-Scattering Capture and Thermalization, *Journal of Cosmology and Astroparticle Physics* 07, 051 (32 pages) (2024).
[Inspire: **1 citations**] [Google Scholar: 0 citations]
3. Bell, N.F., Busoni, G., Robles, S. & Virgato, M. Thermalization and Annihilation of Dark Matter in Neutron Stars, *Journal of Cosmology and Astroparticle Physics* 04, 006 (34 pages) (2024).
[Inspire: **8 citations**] [Google Scholar: 0 citations]
4. Meighen-Berger, S.A., Beacom, J.F., Bell, N.F. & Dolan, M.J. New Signal of Atmospheric Tau Neutrino Appearance: Sub-GeV Neutral-Current Interactions in JUNO, *Physical Review D* 109, 092006 (12 pages) (2024).
[Inspire: **3 citations**] [Google Scholar: 0 citations]
5. Bell, N.F., Newstead, J.L. & Shaukat-Ali, I. Cosmic-ray dark matter confronted by constraints on new light mediators, *Physical Review D* 109, 063034 (2024) (10 pages) (2024).
[Inspire: **12 citations**] [Google Scholar: 0 citations]
6. Bell, N.F., Cox, P., Dolan, M.J., Newstead, J.L. & Ritter, A.C. Exploring light dark matter with the Migdal effect in hydrogen-doped liquid xenon, *Physical Review D* 109, L091902 (9 pages) (2024).
[Inspire: **4 citations**] [Google Scholar: 0 citations]
7. Bell, N.F., Dent, J.B., Dutta, B., Kumar, J. & Newstead, J.L. Indirect detection of low mass dark matter in direct detection experiments with inelastic scattering, *Physical Review D* 104, 103016 (9 pages) (2022).
[Inspire: **3 citations**] [Google Scholar: 0 citations]
8. Bell, N.F., Dolan, M. & Robles, S. Dark Matter Pollution in the Diffuse Supernova Neutrino Background, *Journal of Cosmology and Astroparticle Physics* 11, 060 (19 pages) (2022).
[Inspire: **5 citations**] [Google Scholar: 2 citations]
9. Bell, N.F., Dent, J.B., Lang, R.F., Newstead, J.L. & Ritter, A.C. Observing the Migdal effect from nuclear recoils of neutral particles with liquid xenon and argon detectors, *Physical Review D* 105, 096015 (15 pages) (2022).
[Inspire: **26 citations**] [Google Scholar: 16 citations]
10. Anzuini, F., Bell, N.F., Busoni, G., Motta, T., Robles, S., Thomas, A.W. & Virgato, M. Improved Treatment of Dark Matter Capture in Neutron Stars III: Nucleon and Exotic Targets, *Journal of Cosmology and Astroparticle Physics* 11, 056 (44 pages) (2021).
Erratum: Journal of Cosmology and Astroparticle Physics 04, E02, (2024).
[Inspire: **38 citations**] [Google Scholar: 25 citations]
11. Bell, N.F., Dent, J.B., Dutta, B., Ghost, S., Kumar, J., Newstead, J.L. & Shoemaker, I.M. Cosmic-ray upscattered inelastic dark matter, *Physical Review D* 104, 076020 (9 pages) (2021).
[Inspire: **47 citations**] [Google Scholar: 39 citations]

12. Bell, N.F., Dolan, M. & Robles, S. Searching for Dark Matter in the Sun using Hyper-Kamiokande, *Journal of Cosmology and Astroparticle Physics* 11, 004 (22 pages) (2021).
[Inspire: **16 citations**] [Google Scholar: 12 citations]
13. Bell, N.F., Busoni, G., Ramirez-Quezada, M. E., Robles, S. & Virgato, M. Improved Treatment of Dark Matter Capture in White Dwarfs, *Journal of Cosmology and Astroparticle Physics*, 10, 083 (35 pages) (2021).
[Inspire: **46 citations**] [Google Scholar: 30 citations]
14. Bell, N.F., Dent, J.B. & Sanderson I. Solar Gamma Ray Constraints on Dark Matter Annihilation to Secluded Mediators, *Physical Review D* 104, 023024 (11 pages) (2021).
[Inspire: **29 citations**] [Google Scholar: 15 citations]
15. Bell, N.F., Dent, J.B., Dutta, B., Ghost, S., Kumar, J. & Newstead, J.L. Low-mass inelastic dark matter direct detection via the Migdal effect, *Physical Review D* 104, 076013 (6 pages) (2021).
[Inspire: **36 citations**] [Google Scholar: 30 citations]
16. Bell, N.F., Busoni, G., Motta, T., Robles, S., Thomas, A.W. & Virgato, M. Nucleon Structure and Strong Interactions in Dark Matter Capture in Neutron Stars, *Physical Review Letters* 127, 111803 (6 pages) (2021).
Erratum: Physical Review Letters, 129, 239902(E) (2022).
[Inspire: **62 citations**] [Google Scholar: 43 citations]
17. Bell, N.F., Dolan, M.J., Friedrich, L.S., Ramsey-Musolf, M.J. & Volkas, R.R. A Real Triplet-Singlet Extended Standard Model: Dark Matter and Collider Phenomenology, *Journal of High Energy Physics*, 04, 098 (30 pages) (2021).
[Inspire: **14 citations**] [Google Scholar: 14 citations]
18. Bell, N.F., Busoni, G., Robles, S. & Virgato, M. Improved Treatment of Dark Matter Capture in Neutron Stars II: Leptonic Targets, *Journal of Cosmology and Astroparticle Physics*, 03, 086 (32 pages) (2021).
[Inspire: **63 citations**] [Google Scholar: 49 citations]
19. Bell, N.F., Dent, J.B., Dutta, B., Ghost, S., Kumar, J. & Newstead, J.L. Explaining the XENON1T excess with Luminous Dark Matter, *Physical Review Letters*, 125, 161803 (5 pages) (2020).
[Inspire: **78 citations**] [Google Scholar: 68 citations]
20. Bell, N.F., Busoni, G., Robles, S. & Virgato, M. Improved Treatment of Dark Matter Capture in Neutron Stars, *Journal of Cosmology and Astroparticle Physics* 09, 028 (50 pages) (2020).
[Inspire: **97 citations**] [Google Scholar: 63 citations]
21. Bell, N.F., Dolan, M. & Robles, S. Searching for Sub-GeV Dark Matter in the Galactic Centre using Hyper-Kamiokande, *Journal of Cosmology and Astroparticle Physics* 09, 019 (27 pages) (2020).
[Inspire: **32 citations**] [Google Scholar: 28 citations]
22. Bell, N.F., Dolan, M.J., Friedrich, L.S., Ramsey-Musolf, M.J. & Volkas, R.R. Two-Step Electroweak Symmetry-Breaking: Theory Meets Experiment, *Journal of High Energy Physics*, 05 050 (32 pages) (2020).
[Inspire: **32 citations**] [Google Scholar: 27 citations]
23. Bell, N.F., Dent, J.B., Newstead, J.L., Sabharwal, S. & Weiler, T.J. The Migdal Effect and Photon Bremsstrahlung in effective field theories of dark matter direct detection and coherent elastic neutrino-nucleus scattering, *Physical Review D* 101, 015012 (17 pages) (2020).
[Inspire: **86 citations**] [Google Scholar: 75 citations]
24. Bell, N.F., Busoni, G. & Robles, S. Capture of Leptophilic Dark Matter in Neutron Stars, *Journal of Cosmology and Astroparticle Physics* 06, 054 (24 pages) (2019).
[Inspire: **104 citations**] [Google Scholar: 89 citations]
25. Bell, N.F., Dolan, M.J., Friedrich, L.S., Ramsey-Musolf, M.J. & Volkas, R.R. Electroweak Baryogenesis with Vector-like Leptons and Scalar Singlets, *Journal of High Energy Physics*, 09, 012 (37 pages) (2019).
[Inspire: **28 citations**] [Google Scholar: 23 citations]
26. Bell, N.F., Corbett, T., Nee, M. & Ramsey-Musolf, M.J. Electric Dipole Moments from Post-Sphaleron Baryogenesis, *Physical Review D* 99, 015034 (13 pages) (2019).
[Inspire: **7 citations**] [Google Scholar: 5 citations]

27. Bell, N.F., Busoni, G. & Robles, S. Heating up Neutron Stars with Inelastic Dark Matter, *Journal of Cosmology and Astroparticle Physics* 09, 018 (20 pages) (2018).
[Inspire: **106 citations**] [Google Scholar: 86 citations]
28. Bell, N.F., Busoni, G. & Sanderson, I.W. Loop Effects in Direct Detection, *Journal of Cosmology and Astroparticle Physics* 08, 017 (20 pages) (2018).
Erratum: Journal of Cosmology and Astroparticle Physics 01, E01, (2019).
[Inspire: **56 citations**] [Google Scholar: 61 citations]
29. Bell, N.F., Busoni, G. & Sanderson, I.W. Two Higgs Doublet Portal Dark Matter, *Journal of Cosmology and Astroparticle Physics* 01, 015 (39 pages) (2018).
[Inspire: **36 citations**] [Google Scholar: 45 citations]
30. Bell, N.F., Cai, Y., Dent, J.B., Leane, R.K. & Weiler, T.J. Enhancing Dark Matter Annihilation Rates with Dark Bremsstrahlung, *Physical Review D* 96, 023011 (10 pages) (2017).
[Inspire: **37 citations**] [Google Scholar: 35 citations]
31. Bell, N.F., Busoni, G. & Sanderson, I.W. Self-consistent Dark Matter Simplified Models with an s-channel scalar mediator, *Journal of Cosmology and Astroparticle Physics* 03, 015 (33 pages) (2017).
[Inspire: **70 citations**] [Google Scholar: 83 citations]
32. Bell, N.F., Cai, Y. & Leane, R.K. Impact of Mass Generation for spin-1 Mediator Simplified Models, *Journal of Cosmology and Astroparticle Physics*, 01, 039 (26 pages) (2017).
[Inspire: **58 citations**] [Google Scholar: 57 citations]
33. Bell, N.F., Busoni, G., Kobakhidze, A., Long, D.M. & Schmidt, M.A. Unitarisation of EFT Amplitudes for Dark Matter Searches at the LHC, *Journal of High Energy Physics* 08, 125 (20 pages) (2016).
[Inspire: **21 citations**] [Google Scholar: 22 citations]
34. Bell, N.F., Cai, Y. & Leane, R.K. Dark Forces in the Sky: Signals from Z' and the Dark Higgs, *Journal of Cosmology and Astroparticle Physics*, 08, 001 (17 pages) (2016).
[Inspire: **44 citations**] [Google Scholar: 45 citations]
35. Bell, N.F., Cai, Y. & Leane, R.K. Mono- W Dark Matter Signals at the LHC: Simplified Model Analysis. *Journal of Cosmology and Astroparticle Physics* 01, 051 (19 pages) (2016).
[Inspire: **62 citations**] [Google Scholar: 64 citations]
36. Baldes, I., Bell, N.F., Millar, A. & Volkas, R.R. Asymmetric Dark Matter and CP Violating Scatterings in a UV Complete Model, *Journal of Cosmology and Astroparticle Physics* 10, 048 (28 pages) (2015).
[Inspire: **20 citations**] [Google Scholar: 23 citations]
37. Bell, N.F., Cai, Y., Dent, J.B., Leane, R.K. & Weiler, T.J. Dark matter at the LHC: EFTs and gauge invariance, *Physical Review D* 92:5, 053008 (6 pages) (2015).
[Inspire: **82 citations**] [Google Scholar: 82 citations]
38. Bell, N.F., Horiuchi, S. & Shoemaker, I. Annihilating Asymmetric Dark Matter, *Physical Review D* 91, 023505 (7 pages) (2015).
[Inspire: **47 citations**] [Google Scholar: 45 citations]
39. Baldes, I., Bell, N.F., Millar, A., Petraki, K. & Volkas, R.R. The role of CP violating annihilations in baryogenesis - case study of the neutron portal, *Journal of Cosmology and Astroparticle Physics* 11, 041 (25 pages) (2014).
[Inspire: **30 citations**] [Google Scholar: 24 citations]
40. Baldes, I., Bell, N.F., Petraki, K. & Volkas, R.R. Particle-antiparticle asymmetries from annihilations, *Physical Review Letters* 113, 181601 (5 pages) (2014).
[Inspire: **35 citations**] [Google Scholar: 36 citations]
41. Bell, N.F., Cai, Y. & Leane, R.K. & Medina A.D. Leptophilic Dark Matter with Z' interactions, *Physical Review D* 90, 035027 (12 pages) (2014).
[Inspire: **81 citations**] [Google Scholar: 86 citations]

42. Bell, N.F., Cai, Y. & Medina, A.D. Co-annihilating Dark Matter: Effective Operator Analysis and Collider Phenomenology, *Physical Review D* 89, 115001 (10 pages) (2014).
[Inspire: **37 citations**] [Google Scholar: 40 citations]
43. Baldes, I., Bell, N.F., Petraki, K. & Volkas, R.R. Two radiative inverse seesaw models, dark matter, and baryogenesis, *Journal of Cosmology and Astroparticle Physics*, 07, 029 (32 pages) (2013).
[Inspire: **14 citations**] [Google Scholar: 13 citations]
44. Bell, N.F., Melatos, A. & Petraki, K. Realistic neutron star constraints on bosonic asymmetric dark matter, *Physical Review D* 87, 123507 (14 pages) (2013).
[Inspire: **134 citations**] [Google Scholar: 117 citations]
45. Bell, N.F., Dent, J.B., Galea, A.J., Jacques, T.D., Krauss, L.M. & Weiler, T.J. Searching for Dark Matter at the LHC with a Mono-Z, *Physical Review D* 86, 096011 (11 pages) (2012).
[Inspire: **112 citations**] [Google Scholar: 139 citations]
46. Bell, N.F., Brennan, A.J. & Jacques, T.D. Neutrino Signals from Electroweak Bremsstrahlung in Solar WIMP Annihilation, *Journal of Cosmology and Astroparticle Physics* 10, 045 (17 pages) (2012).
[Inspire: **30 citations**] [Google Scholar: 27 citations]
47. Baldes, I., Bell, N.F. & Volkas, R.R. Baryon Number Violating Scalar Diquarks at the LHC, *Physical Review D* 84, 115019 (8 pages) (2011).
[Inspire: **29 citations**] [Google Scholar: 34 citations]
48. Bell, N.F., Petraki, K., Shoemaker, I.M. & Volkas, R.R. Dark and Visible Matter in a Baryon-Symmetric Universe via the Affleck-Dine Mechanism, *Physical Review D* 84, 123505 (6 pages) (2011).
[Inspire: **88 citations**] [Google Scholar: 83 citations]
49. Bell, N.F., Dent, J.B., Galea, A.J., Jacques, T.D., Krauss, L.M. & Weiler, T.J. W/Z Bremsstrahlung as the Dominant Annihilation Channel for Dark Matter, Revisited, *Physics Letters B*, 706, 6–12 (8 pages) (2011).
[Inspire: **94 citations**] [Google Scholar: 95 citations]
50. Bell, N.F., Dent, J.B., Jacques, T.D. & Weiler, T.J. Dark Matter Annihilation Signatures from Electroweak Bremsstrahlung, *Physical Review D* 84, 103517 (10 pages) (2011).
[Inspire: **67 citations**] [Google Scholar: 69 citations]
51. Bell, N.F. & Petraki, K. Enhanced Neutrino Signals from Dark Matter Annihilation in the Sun via Metastable Mediators, *Journal of Cosmology and Astroparticle Physics* 1104, 003 (20 pages) (2011).
[Inspire: **85 citations**] [Google Scholar: 84 citations]
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