

Associate Professor Nicole F. Bell

Curriculum Vitae

School of Physics
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RESEARCH FOCUS

Particle Physics, Astrophysics and Cosmology (with particular emphasis on dark matter, matter-antimatter asymmetries, and neutrino physics).

ACADEMIC QUALIFICATIONS

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

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

ACADEMIC APPOINTMENTS

Jan 2014 – present Associate Professor and Reader,
School of Physics, The University of Melbourne

Dec 2012 – present ARC Future Fellow,
School of Physics, The University of Melbourne

Sep 2008 – Dec 2013 Senior Lecturer, Level C,
School of Physics, The University of Melbourne

Jan 2007 – Aug 2008 Lecturer, Level B,
School of Physics, The University of Melbourne

Sep 2004 – Oct 2006 Sherman Fairchild Postdoctoral Scholar
Division of Physics, Mathematics and Astronomy
California Institute of Technology, USA

Sep 2001 – Sep 2004 Research Associate
NASA/Fermilab Theoretical Astrophysics Group
Fermi National Accelerator Laboratory, USA

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

Mar 2001 – Sep 2001 Australian Postdoctoral Fellow (Australian Research Council)
School of Physics, The University of Melbourne

PROFESSIONAL AFFILIATIONS

2002 – present Member of American Physical Society (elected Fellow 2016)

2002 – present Member of Australian Institute of Physics

PRIZES, SCHOLARSHIPS, AWARDS

2016	Fellow of the American Physical Society
2012 – 2016	Future Fellowship, <i>Australian Research Council, competitive research grant</i>
2011	Dean's Award for Excellence in Research, <i>Faculty of Science, Univ. 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, best physics PhD thesis at an Australian university</i>
2001	ARC Australian Postdoctoral Fellowship, <i>competitive research grant</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>

FUNDED GRANTS

2017 – 2019	Australian Research Council Discovery Project, DP170104382 Dolan, Bell , Volkas, <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 (ARC).
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. (3rd year relinquished due to Center of Excellence.)
2008	Early Career Researcher grant, Bell , Neutrino Decay in Cosmology and Astrophysics, \$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>

ACADEMIC SERVICE – ADVISORY

2015 – present	Editorial Board, Scientific Reports (Nature Publishing Group)
2007 – present	Assessor for ARC (Australian Research Council) grant proposals
2016	Referee for Millennium Science Initiative grants, Chile
2007 – 2008	Reviewer for NSF (National Science Foundation, USA) grant proposals
2013 – present	Referee, Astroparticle Physics
2009 – present	Referee, Astronomy & Astrophysics
2008 – present	Referee, Journal of Cosmology and Astroparticle Physics
2007 – present	Referee, Journal of Physics G
2006	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

ACADEMIC SERVICE - CONFERENCE/WORKSHOP ORGANISATION

2017	International Advisory Committee, WIN2017, Irvine California, June 2017
2017	Organizing committee, CAASTRO-CoEPP workshop, Melbourne, Jan 2017
2016	International Advisory Committee, CosPA 2016 conference, Sydney, Nov 2016,
2016	International Advisory Committee, International Neutrino Summer School (INSS), Quy-Nhon, Vietnam, July 2016
2016	Local organizing committee, SUSY 2016 conference, Melbourne, July 2016
2016	Chair, pre-SUSY summer school, Melbourne, June 2016
2015	Organizing committee, CoEPP Summer School, Monash, Feb 2015
2014	Member of International Advisory Committee and Local Organizing Committee, <i>10th Asia-Pacific Symposium Symposium on Cosmology and Particle Astrophysics (CosPA 2014)</i> , Auckland, New Zealand, Dec 2014
2012	Member of organising committee and proceedings editorial committee, <i>36th International Conference on High Energy Physics (ICHEP 2012)</i> Melbourne, July 2012.
2012	Convenor of the “Cosmic Frontier” parallel sessions, <i>11th Conference on the Intersections of Particle and Nuclear Physics (CIPANP2012)</i> , Florida, USA, May 2012
2010	Member of program committee, <i>Australian Institute of Physics Congress</i> , Dec 2010.
2009	Co-organizer of the <i>International Symposium on Cosmology and Particle Astrophysics (CosPA)</i> , Melbourne, 18 – 20 Nov 2009
2009	Member of the local organising committee, <i>5th International Workshop on the Dark Side of the Universe (DSU09)</i> , Melbourne, 1-5 June 2009
2008	Co-convenor of the “Particle Astrophysics” session at the <i>2008 TeV Particle Astrophysics conference</i> , Beijing, China, 24 - 28 Sep 2008
2008	Member of organising committee, <i>Heavy Quarks and Leptons</i> , Melb, 5 - 9 June 2008
2008	Co chair of <i>Melbourne Neutrino Theory Workshop</i> , Melbourne, 2 - 4 June 2008
2006	Co-convenor of “Neutrino Physics” parallel session, Joint Meeting of the US Division of Particles and Fields (DPF), the Japan Physical Society (JPS), and the Particle Physicists of the Pacific Region, Honolulu, Hawaii, USA Oct 2006.
2002	Co-chair of <i>Neutrino News from the Lab and the Cosmos</i> , Fermilab, USA Oct 2002

ACADEMIC SERVICE – COMMITTEES

2016	Member, SPC working group on Mathematics Pathways
2015 – present	Member of Faculty of Science Diversity and Inclusion Committee
2011 – present	Member of Selection Procedures Committee of Academic Board, Univ. of Melbourne
2010 – present	General Assembly member of the Asia-Pacific Organization for Cosmology and Particle Astrophysics (APCosPA)
2008 – present	Treasurer/Secretary, Australian Institute for High Energy Physics (AUSHEP)
2017	Reviewer, John Monash Scholarships
2016	PhD thesis examiner, University of Adelaide
2016	Member of selection panel, lectureship in experimental particle physics, Univ. of Melb
2015 – 2016	Member of Faculty of Science Level C Promotion Panel, University of Melbourne
2015	PhD thesis examiner, SISSA, International School for Advanced Study, Trieste, Italy

2014	Member of selection panel, lectureship in theoretical particle physics, Univ. of Melb
2013 – 2015	Member (chair 2015) Bragg Gold Medal selection committee (Aust. Institute of Physics)
2012	Member of selection panel, lecturship in particle physics, Monash University
2011	Member of Melbourne Graduate School of Science Academic Program Committee
2010 – 2012	Equal Opportunity Observer on academic promotion panels, Univ. of Melbourne
2010	PhD thesis examiner, University of Canterbury, New Zealand
2008 – 2009	Member of the Science Faculty selection panel for the Chancellor's Prize
2008	Member of the Physics Academic Programs Committee
2007 – 2011	Coordinator of Physics Masters, Honours and Postgraduate Diploma programs
2007 – 2011	Member of Physics Research & Research Training Committee
2006 – 2011	Member of selection panels for research associates in Theoretical Particle Physics
2006	Member of selection panel for Lectureship in Theoretical Particle Physics
2005 – 2006	Journal club organiser, Kellogg Lab, Caltech
2002 – 2003	Seminar organiser, Fermilab Theoretical Astrophysics

POSTDOCTORAL FELLOWS SUPERVISED

2015 – present	Giorgio Busoni
2015 – present	Tyler Corbett
2012 – present	Yi Cai
2009 – 2012	Kalliopi Petraki. (→ Posdoc at NIKHEF, Amsterdam → LPTHE, Paris)

RESEARCH STUDENTS SUPERVISED

PhD students

2016 – present	Leon Friedrich (co-supervisor)
2015	Alexander Miller (principal supervisor) (→ PhD at Max Planck Institute, Munich)
2013 – present	Rebecca Leane (principal supervisor)
2012 – 2016	Amelia Brennan (co-supervisor)
2011 – 2015	Iason Baldes (co-supervisor) (→ Postdoc at DESY, Germany)
2009 – 2013	Ahmad Galea (principle supervisor) (→ Postdoc at University of Oslo, Norway)
2007 – 2011	Thomas Jacques (principle supervisor) (→ Postdoc at Arizona State University, USA → postdoc at University of Geneva, Switzerland → Postdoc at SISSA, Italy)
2007 – 2008	Sandy Law (co-supervisor) (→ Postdoc at NCKU University, Taiwan)

MSc students

2015 – present	Benjamin Graham (co-supervisor)
2015 – 2016	Isaac Sanderson (principle supervisor)
2013 – 2015	Alexander Miller (principal supervisor)
2010 – 2011	Amelia Brennan (principal supervisor)
2009 – 2010	Iason Baldes (co-supervisor)

Honours students

2008	Ahmad Galea (principle supervisor)
2007	Alexander Malone (principle supervisor)

TEACHING – COURSES

2011 – 2016	PHYC90011 MSc Particle Physics
2009 – 2011	PHYC90007/640-610 MSc Quantum Mechanics
2009 – 2011	PHYC20010/640-214 Quantum Physics & Special Relativity (quantum section)
2007 – 2008	640-223 Quantum Mechanics & Thermal Physics (Adv.) (quantum section)
2008	Quantum Mechanics B (Honours course)
2008, 2010	640-112 Physics 2 (Adv.)
2007	640-122 Physics 2 (Adv.)
2007 – 2011	Masters, Honours and Postgraduate Diploma coordinator

INVITED CONFERENCE TALKS

1. *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, Jul 2016.
2. *The Particle Physics of Dark Matter and Beyond*
Plenary talk, 8th Australasian Conference on General Relativity and Gravitation, Monash University, 3 Dec 2015.
3. *Particle – Antiparticle Asymmetries from Scattering*
Plenary talk, PACIFIC 2015 (Particle Astrophysics and Cosmology, Including Fundamental Interactions), French Polynesia, 17 Sep 2015.
4. *Dark Matter in the Universe*
Plenary talk, conference on Physics at the LHC and Beyond, Quy-Nhon, Vietnam, August 2014
5. *Dark Matter: Theory Overview*
Plenary talk, CosPA2013, 10th Int. Symposium on Cosmology & Particle Astrophys., Hawaii, 12 Nov 2013
6. *Dark Matter: Indirect Detection and LHC Searches*
Plenary talk, LHC, Particle Physics and the Cosmos conference, Auckland, New Zealand, 13th July 2012.
7. *Indirect Detection of Dark Matter – Recent Developments*
Plenary talk, 2011 Phenomenology Symposium, Univ. of Wisconsin at Madison, USA, 10th May 2011.
8. *Indirect Detection of Particle Dark Matter*
Parallel talk, Australian Inst. Physics Congress, Nuclear and Particle Physics stream, Melbourne, Dec 2010.
9. *Dark Matter Annihilation with Electroweak Bremsstrahlung*
Parallel talk, CosPA/COSMO 2010, Tokyo, Japan, September 2010.
10. *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, 28th May 2009.
11. *Dark Matter Annihilation*
Plenary talk, PPC09, 3rd International Workshop in the Interconnection between Particle Physics and Cosmology, University of Oklahoma, USA, 20th May 2009.
12. *Dark Matter Annihilation to Electrons, Neutrinos and Gamma Rays*
Plenary talk, Dark 2009, Sixth International Heidelberg Conference on Dark Matter in Astro and Particle Physics, Christchurch, New Zealand, 20th January 2009.
13. *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, 30th October 2008.
14. *Probing New Physics with Astrophysical Neutrinos*
Plenary talk, Neutrino 2008, XXIII International Conference on Neutrino Physics and Astrophysics, Christchurch, New Zealand, 30th May, 2008.
15. *Dark Matter Annihilation in the Late Universe*
Parallel talk, CosPA2007, International Symposium on Cosmology and Particle Astrophysics, National Taiwan University, 15th November 2007.
16. *Neutrinos in Cosmology*
Plenary talk, Gordon Research Conference on Nuclear Physics, Newport RI, USA, 16th July 2007.
17. *Neutrino Astrophysics Panel Discussion*
Panel discussion, Bethe Centennial Symposium on Astrophysics, Cornell University, 2nd June 2006.
18. *Highlights of Neutrinos in Cosmology*
Plenary talk, April Meeting of the American Physical Society, Dallas, Texas, 24th April 2006.
19. *Magnetic Moments of Dirac Neutrinos*
Parallel talk, PANIC 05, Particles and Nuclei International Conference, Santa Fe, NM, 27th Oct 2005.
20. *Cosmological Signatures of Neutrino Interactions*
Plenary talk, Santa Fe Summer Workshop, Implications of Neutrino Flavor Oscillations, 12 Jul 2005

21. *Neutrino Signatures in Cosmology*
Plenary talk, Workshop on Exploring the Physics Frontier at the Deep Underground Laboratories, Institute for Nuclear Theory, Seattle, 24th June 2005.
22. *Neutrino Signatures in Cosmology*
Parallel talk, Frontiers in Contemporary Physics III, Vanderbilt University, 26th May 2005.
23. *Galactic Positrons and MeV Dark Matter*
Parallel talk, Frontiers in Contemporary Physics III, Vanderbilt University, 25th May 2005.
24. *Relic Neutrino Abundance and Cosmological Neutrino Mass Limits*
Plenary talk, Fermilab Annual Users' Meeting, 2nd June 2004.
25. *Neutrino Astrophysics: Theoretical Overview*
Parallel talk, WIN 03, 19th International Workshop on Weak Interactions and Neutrinos, Lake Geneva, Wisconsin, 9th October 2003.
26. *Neutrino Mixing and Cosmology*
Parallel talk, TAUP 2003, Eighth International Workshop on Topics in Astroparticle and Underground Physics, University of Washington, Seattle, 5th September 2003.
27. *Cosmological Connections of Neutrino Physics*
Plenary talk, Workshop On Trends In Neutrino Physics, Argonne National Laboratory, 13th May 2003.
28. *Neutrino Mixing and Big Bang Nucleosynthesis*
Parallel talk, American Physical Society Meeting, Philadelphia, 7th April 2003.
29. *The Universe's Lepton Number*
Plenary talk, Neutrinos: Data, Cosmos, and Planck Scale conference, Kavli Institute for Theoretical Physics (KITP) UC Santa Barbara, 7th March 2003.
30. *Neutrinos and Cosmology*
"Starry Messages" lecture series, Fermilab, 24th October 2002.
31. *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.
32. *Neutrino Oscillations and the Early Universe -- the Quantum Mechanics of Open Systems*
Bragg Lecture, Aust. Institute Physics Congress, Sydney, Australia, 10th July 2002.
33. *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, 17th March 2002.
34. *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, 29th May 2001.

INVITED SEMINARS & COLLOQUIA, AND CONTRIBUTED CONFERENCE TALKS

35. *Self-consistent Dark Matter Simplified Models with an s-channel Scalar Mediator*
LHC Dark Matter Working group, CERN Geneva (remotely), 15 Dec 2016
36. *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
37. *Particle – Antiparticle Asymmetries from Scattering*
CoEPP annual workshop, Torquay, VIC, 19 Feb 2016
38. *Mono-W and Gauge Invariance*
LHC Dark Matter Working Group meeting, CERN Geneva (remotely), 10 Dec 2015
39. *The Particle Physics of Dark Matter and Beyond*
School of Physics Colloquium, The University of Sydney, 19 Oct 2015
40. *Dark Matter at the LHC: the Importance of Gauge Invariance*
ATLAS Astroparticle Forum, CERN Geneva (remotely), 7 Jul 2015
41. *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
42. *Dark Matter*
Lecture at CoEPP Summer School, Monash, 16 Feb 2015.

43. *Collider Constraints on Dark Matter*
CoEPP and CAASTRO joint workshop on Dark Matter, Stawell, Victoria, 29 Sep 2014.
44. *Dark Matter and Particle Physics*
CoEPP annual workshop, Cairns, QLD, 9 Jul 2013.
45. *Neutrino physics and astrophysics*
CoEPP and CAASTRO joint workshop, The University of Melbourne, 28 Feb 2013.
46. *Indirect detection of dark matter - electroweak bremsstrahlung and other stories*
University of California at Los Angeles, USA, joint theory-experiment seminar, 18th May 2011.
47. *Indirect detection of dark matter - electroweak bremsstrahlung and other stories*
Fermi National Accelerator Laboratory, USA, Astrophysics seminar, 16th May 2011.
48. *Indirect detection of dark matter - electroweak bremsstrahlung and other stories*
The Ohio State University, USA, Particle Astrophysics Seminar, 13th May 2011.
49. *Indirect Detection of Dark Matter*
University of Queensland, Australia, Physics Colloquium, 19th Nov 2010.
50. *Indirect Detection of Dark Matter*
University of Canterbury, Christchurch, New Zealand, Physics Seminar, 2nd Nov 2010.
51. *Indirect Detection of Dark Matter*
Monash University, Australia, Centre for Stellar and Planetary Astrophysics Colloquium, 26th Oct 2010.
52. *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, 3rd June 2009.
53. *Neutrino Magnetic Moments and Electromagnetic Leptogenesis*
CIPANP 2009, 10th Conference on the Intersections of Particle and Nuclear Physics, San Diego, California, USA, 27th May 2009.
54. *Dark Matter Annihilation to Electrons, Neutrinos and Gamma Rays*
The Ohio State University, USA, Center for Cosmology and Astroparticle Physics Seminar, 26th May 2009.
55. *Neutrino Magnetic Moments and Electromagnetic Leptogenesis*
Australian Institute of Physics 18th National Congress, Adelaide, 2 Dec 2008.
56. *Dark Matter Annihilation in the Late Universe*
TeVPA 2008, TeV Particle Astrophysics IV, Beijing, China, 24 Sep 2008.
57. *Neutrino, Dark Matter, and Beyond*
School of Physics Colloquium, The University of Sydney, 18th Aug 2008.
58. *Annihilating Dark Matter*
Dark 2007, Sixth International Heidelberg Conference on Dark Matter in Astro and Particle Physics, Sydney, 27th Oct 2007.
59. *Neutrinos in Cosmology*
School of Physics Colloquium, The University of Melbourne, 9th May 2007.
60. *A General Bound on the Dark Matter Annihilation Cross Section*
XXIII Texas Symposium on Relativistic Astrophysics, Melbourne, 12 Dec 2006
61. *How Magnetic is the Neutrino?*
Festschrift in Honour of Bruce McKellar and Girish Joshi, The University of Melbourne, 30 Dec 2006.
62. *Neutrino Magnetic Moments and Galactic Positrons & Annihilating Dark Matter*
Michelson Postdoctoral Prize lecture (seminar), Case Western Reserve University, 5 May 2006.
63. *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.
64. *Cosmological Neutrinos: Relic Neutrino Abundance and Neutrino Mass Constraints*
Michelson Postdoctoral Prize lecture (seminar), Case Western Reserve University, 2 May 2006.
65. *Astrophysical Neutrinos: Revealing Neutrino Properties at the Highest Energies*
Michelson Postdoctoral Prize lecture (seminar), Case Western Reserve University, 1 May 2006.
66. *Cosmic Neutrinos -- from the Highest Energies to the Lowest*
Physics Colloquium, California State University, Fresno, 4th November 2005.
67. *Topics in Particle Physics and Cosmology*
School of Physics Colloquium, The University of Melbourne, 8th April 2005.
68. *Neutrinoless Universe and MeV Dark Matter & Galactic Positrons*
University of California at San Diego, Astrophysics and Space Sciences Seminar, 2nd Nov 2004.
69. *Galactic Positrons and MeV Dark Matter*
TASC 04, 4th Theoretical Astrophysics in Southern California Meeting, UC Irvine, 15th Oct 2004.
70. *Cosmic Neutrinos -- from the Highest Energies to the Lowest*
University of New Mexico, Nuclear, Particle & Astroparticle Physics Seminar, 7th September 2004.

71. *Cosmic Neutrinos -- from the Highest Energies to the Lowest*
Fermilab, Joint Experimental -- Theoretical Seminar, 20th August 2004.
72. *Cosmological Neutrino Mass Limits --- The Case of the Disappearing Relic Neutrinos*
PHENO 2004 Symposium, University of Wisconsin, Madison, 26th April 2004.
73. *Revealing Neutrino Properties via High Energy Neutrino Astrophysics*
University of California, Irvine, 16th March 2004.
74. *Revealing Neutrino Properties via High Energy Neutrino Astrophysics*
Caltech, Kellogg Seminar, 12th March 2004.
75. *Revealing Neutrino Properties via High Energy Neutrino Astrophysics*
University of Wisconsin, Madison, Cosmology and Astrophysics Seminar, 5th February 2004
76. *High Energy Astrophysical Neutrinos: Revealing Neutrino Properties with Flavour Ratio Measurements*
Los Alamos National Laboratory, T-8 seminar, 15th January 2004.
77. *High Energy Astrophysical Neutrinos: Revealing Neutrino Properties with Flavour Ratio Measurements*
Institute for Nuclear Theory, University of Washington, Seattle, 12th January 2004.
78. *High Energy Astrophysical Neutrinos: Revealing Neutrino Properties with Flavour Ratio Measurements*
School of Natural Sciences, Institute for Advanced Study, Princeton, 19th December 2003.
79. *The Universe's Lepton Number*
Argonne National Lab, Theory seminar - Physics Division, 13th March 2003.
80. *Neutrino Mixing and Big Bang Nucleosynthesis*
Indiana University, High Energy Physics and Astrophysics Seminar, 4th November 2002.
81. *Do Neutrinos Decay?*
North Carolina State University, TNT seminar, 10th September 2002.
82. *Neutrino Mixing in the Early Universe*
Workshop on Neutrino News from the Lab and the Cosmos, Fermilab, 19th October 2002.
83. *Do Solar Neutrinos Decay?*
University of Melbourne, School of Physics, Theory Seminar, 23rd July 2002.
84. *Do Neutrinos Decay?*
PHENO 2002 Symposium, University of Wisconsin, Madison, 22nd April 2002.
85. *Do Solar Neutrinos Decay?*
University of Delaware, Particle Theory and Astrophysics seminar, 18th April 2002.
86. *Do Solar Neutrinos Decay?*
Institute for Nuclear Theory, University of Washington, Seattle. Neutrino Masses & Mixing Mini Workshop (Nucleosynthesis Program), 11th April 2002.
87. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis*
Ohio State University, Department of Physics, HEP/Astro Seminar, 6th March 2002.
88. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis*
Purdue University, Department of Physics, High Energy Theory Seminar, 19th February 2002.
89. *Neutrinos in the Early Universe*
"Neutrinos for fun and profit" lecture - Fermilab, 15th November 2001.
90. *Coherence and Decoherence - from Quantum Zeno to Getting in Sync*
Enrico Fermi Institute Interdisciplinary Theory Seminar, Chicago, 2nd November 2001.
91. *Relic Neutrino Asymmetries and Big Bang Nucleosynthesis*
Fermilab, Theoretical Astrophysics Seminar, 22nd October 2001.
92. *Synchronisation.*
University of Melbourne, School of Physics, Theory Seminar, November 2000.
93. *Relic Neutrino Asymmetries*
Les Houches Summer School on "The Primordial Universe", France, July 1999.

PUBLICATIONS**h-index = 28. Average of 50 citations per refereed journal article.**

Citations statistics from the INSPIRE high energy physics database, 2016.

Refereed journal articles

1. Bell, N.F., Busoni, G. & Sanderson. Self-consistent Dark Matter Simplified Models with an s-channel scalar mediator, arXiv:1612.03475.
0 citations
2. Bell, N.F., Cai, Y. & Leane, R.K. Impact of Mass Generation for Simplified Dark Matter Models, arXiv:1610.03063
3 citations
3. Bell, N.F., Busoni, G., Kobakhidze, A., Long, D.M. & Schmidt, M.A. Unitarisation of EFT Amplitudes for Dark Matter Searches at the LHC, *JHEP* 1608, 125 (20 pages) (2016).
5 citations
4. Bell, N.F., Cai, Y. & Leane, R.K., Dark Forces in the Sky: Signals from Z' and the Dark Higgs, *JCAP*, 1608:08 001 (17 pages) (2016).
6 citations
5. Bell, N.F., Cai, Y. & Leane, R.K., Mono-W Dark Matter Signals at the LHC: Simplified Model Analysis. *JCAP* 1601:01, 051 (19 pages) (2016).
20 citations
6. Baldes, I., Bell, N.F., Millar, A. & Volkas, R.R. Asymmetric Dark Matter and CP Violating Scatterings in a UV Complete Model, *JCAP* 1510:10, 048 (28 pages) (2015).
2 citations
7. 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)
24 citations
8. Bell, N.F., Horiuchi, S. & Shoemaker, I. Annihilating Asymmetric Dark Matter, *Phys. Rev. D* 91, 023505 (7 pages) (2015).
31 citations
9. 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, *JCAP* 1411, 041 (25 pages) (2014)
13 citations
10. Baldes, I., Bell, N.F., Petraki, K. & Volkas, R.R. Particle-antiparticle asymmetries from annihilations, *Phys. Rev. Lett.* 113, 181601 (5 pages) (2014).
9 citations
11. Bell, N.F., Cai, Y., Leane, R.K. & Medina A.D. Leptophilic Dark Matter with Z' interactions, *Phys.Rev. D* 90, 035027 (12 pages) (2014).
18 citations
12. Bell, N.F., Cai, Y. & Medina, A.D. Co-annihilating Dark Matter: Effective Operator Analysis and Collider Phenomenology, *Phys.Rev. D* 89, 115001 (10 pages) (2014).
12 citations
13. Baldes, I., Bell, N.F., Petraki, K. & Volkas, R.R. Two radiative inverse seesaw models, dark matter, and baryogenesis, *JCAP*, 1307, 029 (32 pages) (2013).
6 citations
14. Bell, N.F., Melatos, A. & Petraki, K. Realistic neutron star constraints on bosonic asymmetric dark matter, *Phys. Rev. D* 87, 123507 (14 pages) (2013).
34 citations

15. 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, arXiv:1209.0231 *Phys. Rev. D* 86, 096011 (11 pages) (2012).
58 citations
16. Bell, N.F., Brennan, A.J. & Jacques, T.D. Neutrino Signals from Electroweak Bremsstrahlung in Solar WIMP Annihilation, *JCAP* 1210, 045 (17 pages) (2012).
15 citations
17. Baldes, I., Bell, N.F. & Volkas, R.R. Baryon Number Violating Scalar Diquarks at the LHC, *Phys. Rev. D* 84, 115019 (8 pages) (2011).
10 citations
18. 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, *Phys. Rev. D* 84, 123505 (6 pages) (2011).
67 citations
19. 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, *Phys. Lett. B*, 706, 6–12 (8 pages) (2011).
70 citations
20. Bell, N.F., Dent, J.B., Jacques, T.D. & Weiler, T.J. Dark Matter Annihilation Signatures from Electroweak Bremsstrahlung, *Phys. Rev. D* 84, 103517 (10 pages) (2011).
51 citations
21. Bell, N.F. & Petraki, K. Enhanced Neutrino Signals from Dark Matter Annihilation in the Sun via Metastable Mediators, *JCAP* 1104, 003 (20 pages) (2011).
11 citations
22. Bell, N.F., Galea, A.J. & Volkas, R.R. A Model for Late Dark Matter Decay, *Phys. Rev. D* 83, 063504 (10 pages) (2011).
9 citations
23. Bell, N.F., Dent, J.B., Jacques, T.D. & Weiler, T.J. W/Z Bremsstrahlung as the Dominant Annihilation Channel for Dark Matter, *Phys. Rev. D* 83, 013001 (18 pages) (2011).
57 citations
24. Bell, N.F., Galea, A.J. & Petraki, K. Lifetime Constraints for Late Dark Matter Decay. *Phys. Rev. D* 82, 023514 (13 pages) (2010).
25 citations
25. Crocker, R.M., Bell, N.F., Balazs, C. & Jones, D. I. Radio and Gamma-ray Constraints on Dark Matter Annihilation in the Galactic Center. *Phys. Rev. D* 81, 063516 (14 pages) (2010).
58 citations
26. Bell, N.F. & Jacques, T.D. Gamma-ray Constraints on Dark Matter Annihilation into Charged Particles. *Phys. Rev. D* 79, 043507 (7 pages) (2009).
41 citations
27. Bell, N.F., Kayser, B. & Law, S.S.C. Electromagnetic Leptogenesis. *Phys. Rev. D* 78, 085024 (6 pages) (2008).
8 citations
28. Bell, N.F., Dent, J.B., Jacques, T.D. & Weiler, T.J. Electroweak Bremsstrahlung in Dark Matter annihilation. *Phys. Rev. D* 78, 083540 (7 pages) (2008).
62 citations
29. Mack, G.D., Jacques, T.D., Beacom, J.F., Bell, N.F. & Yuksel, H. Conservative Constraints on Dark Matter Annihilation into Gamma Rays. *Phys. Rev. D* 78, 063452 (9 pages) (2008).
86 citations

30. Beacom, J.F., Bell, N.F. & Mack, G.D. General Upper Bound on the Dark Matter Total Annihilation Cross Section. *Phys. Rev. Lett.* 99, 231301 (4 pages) (2007).
101 citations
31. Bell, N.F., Gorchtein, M., Ramsey-Musolf, M.J., Vogel, P. & Wang, P. Model Independent Bounds on Magnetic Moments of Majorana Neutrinos. *Phys. Lett. B* 642, 377 - 383 (7 pages) (2006).
50 citations
32. Bell, N.F., Pierpaoli, E. & Sigurdson, K. Cosmological Signatures of Interacting Neutrinos. *Phys. Rev. D* 73, 063523 (17 pages) (2006).
65 citations
33. Bell, N.F., Cirigliano, V., Ramsey-Musolf, M.J., Vogel, P. & Wise, M.B. How Magnetic is the Dirac Neutrino? *Phys. Rev. Lett.* 95, 151802 (4 pages) (2005).
77 citations
34. Abazajian, K.N., Bell, N.F., Fuller, G.M. & Wong, Y.Y.Y. Cosmological Lepton Asymmetry, Primordial Nucleosynthesis and Sterile Neutrinos. *Phys. Rev. D* 72, 063004 (23 pages) (2005).
69 citations
35. Beacom, J.F., Bell, N.F. & Bertone, G. Gamma-Ray Constraint on Galactic Positron Production by MeV Dark Matter. *Phys. Rev. Lett.* 94, 171301 (4 pages) (2005).
185 citations
36. Beacom, J.F., Bell, N.F. & Dodelson, S. Neutrinoless Universe. *Phys. Rev. Lett.* 93, 121302 (4 pages) (2004).
109 citations
37. Beacom, J.F., Bell, N.F., Hooper, D., Pakvasa, S. & Weiler, T.J. Sensitivity to θ_{13} and δ in the Decaying Cosmic Neutrino Scenario. *Phys. Rev. D* 69, 017303 (3 pages) (2004).
91 citations
38. Beacom, J.F., Bell, N.F., Hooper, D., Learned, J.G., Pakvasa, S. & Weiler, T.J. Pseudo-Dirac Neutrinos, A Challenge for Neutrino Telescopes. *Phys. Rev. Lett.* 92, 011101 (4 pages) (2004).
100 citations
39. Beacom, J.F., Bell, N.F., Hooper, D., Pakvasa, S. & Weiler, T.J. Measuring Flavor Ratios of High-Energy Astrophysical Neutrinos. *Phys. Rev. D* 68, 093005 (10 pages) (2003).
204 citations
40. Bell, N.F., Rawlinson, A.A. & Sawyer, R.F. Speed-up through Entanglement -- Many-Body Effects in Neutrino Processes. *Phys. Lett. B* 573, 86 - 93 (8 pages) (2003).
30 citations
41. Beacom, J.F., Bell, N.F., Hooper, D., Pakvasa, S. & Weiler, T.J. Decay of High-Energy Astrophysical Neutrinos. *Phys. Rev. Lett.* 90, 181301 (4 pages) (2003).
161 citations
42. Bell, N.F., Sawyer, R.F., Volkas, R.R. & Wong, Y.Y.Y. State Permutations from Manipulation of Near Level-Crossings. *Phys. Rev. A* 68, 032307 (6 pages) (2003).
0 citations
43. Beacom, J.F. & Bell, N.F. Do Solar Neutrinos Decay? *Phys. Rev. D* 65, 113009 (9 pages) (2002).
132 citations
44. Abazajian, K.N., Beacom, J.F. & Bell, N.F. Stringent Constraints on Cosmological Neutrino-Antineutrino Asymmetries from Synchronized Flavor Transformation. *Phys. Rev. D* 66, 013008 (11 pages) (2002).
187 citations
45. Bell, N.F., Sawyer, R.F., Volkas, R.R. & Wong, Y.Y.Y. Generation of Entangled States and Error Protection from Adiabatic Avoided Level Crossings. *Phys. Rev. A* 65, 042328 (8 pages) (2002).

9 citations

46. Bell, N.F., Sawyer, R.F. & Volkas, R.R. Entanglement and Quantal Coherence: Study of Two Limiting Cases of Rapid System--Bath Interactions. *Phys. Rev. A* 65, 052105 (12 pages) (2002).

3 citations

47. Bell, N.F., Sawyer, R.F. & Volkas, R.R. Synchronization and MSW Sharpening of Neutrinos Propagating in a Flavour Blind Medium. *Phys. Lett. B* 500, 16 – 21 (6 pages) (2001).

13 citations

48. Bell, N.F. & Volkas, R.R. Bottom-up Model for Maximal $\nu_\mu - \nu_\tau$ Mixing. *Phys. Rev. D* 63, 013006 (8 pages) (2001).

20 citations

49. Bell, N.F. Mirror Matter and Heavy Singlet Neutrino Oscillations in the Early Universe. *Phys. Lett. B* 479, 257 – 265 (8 pages) (2000).

18 citations

50. Bell, N.F. & Volkas, R.R. Mirror Matter and Primordial Black Holes. *Phys. Rev. D* 59, 107301 (3 pages) (1999).

35 citations

51. Bell, N.F., Volkas, R.R. & Wong, Y.Y.Y. Relic Neutrino Asymmetry Evolution from First Principles. *Phys. Rev. D* 59, 113001 (22 pages) (1999).

80 citations

52. Bell, N.F., Foot, R. & Volkas, R.R. Relic Neutrino Asymmetries and Big Bang Nucleosynthesis in a Four Neutrino Model. *Phys. Rev. D* 58, 105010 (6 pages) (1998).

61 citations**Conference Proceedings**

53. Bell, N.F. Constraining Dark Matter Annihilation with Neutrinos and Gamma Rays, *Int. J. Mod. Phys. Conf. Ser.* 01, 245 – 251 (7 pages) (2011).

54. Bell, N.F. Dark Matter Annihilation to Electrons, Neutrinos and Gamma Rays, *AIP Conf. Proc.* 1182, 252 – 255 (4 pages) (2009).

55. Bell, N.F. Neutrino Magnetic Moments and Electromagnetic Leptogenesis, *AIP Conf. Proc.* 1182, 28 – 31 (4 pages) (2009).

56. Bell, N.F. Probing New Physics with Astrophysical Neutrinos, *J. Phys. Conf. Ser.*, 136, 022043 (6 pages) (2008).

57. Bell, N.F. Dark Matter Annihilation in the Late Universe. *Mod. Phys. Lett. A* 23, 1643-1648 (6 pages) (2008).

58. Bell, N.F. Annihilating Dark Matter. In *Dark Matter in Astroparticle and Particle Physics*, Proceedings of the 6th International Heidelberg Conference on Dark Matter and Particle Physics (DARK 2007), Sydney, Australia, September 2007, edited by H. V. Klapdor-Kleingrothaus and G. F. Lewis, World Scientific 2008, pp 150 – 154 (5 pages).

59. Bell, N.F. How Magnetic is the Neutrino? *Int. J. Mod. Phys. A* 22, 4891 – 4899 (9 pages) (2007).

60. Gorchtein, M., Bell, N.F., Ramsey-Musolf, M.J., Vogel, P. & Wang, P. Model Independent Naturalness Bounds on Magnetic Moments of Majorana Neutrinos. *AIP Conf. Proc.* 903, 287 – 290 (4 pages) (2007).

61. Bell, N.F., Cirigliano, V., Ramsey-Musolf, M.J., Vogel, P. & Wise, M.B. Magnetic Moments of Dirac Neutrinos. *AIP Conf. Proc.* 842, 874 – 876 (3 pages) (2006).

62. Bell, N.F. Neutrino Mixing and Cosmology. *Nucl. Phys. B Proc. Suppl.* 138, 76 – 78 (3 pages) (2005).

63. Bell, N.F. Neutrino Oscillations and Big Bang Nucleosynthesis. *Nucl. Instrum. Meth. A* 503, 226 – 229 (4 pages) (2003).