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Associate Professor
Cyclotron Institute and Department of
Physics & Astronomy Texas A&M University

Education:

- 1995 McMaster University B.Sc. in Physics (honours)
- 2001 Simon Fraser University M.Sc. in Physics
- 2005 Simon Fraser University Ph.D. in Physics

Research and Professional Experience:


- 2014-present Associate Professor, Department of Physics & Astronomy, Texas A&M University
- 2007-2014 Assistant Professor, Department of Physics & Astronomy, Texas A&M University
- 2005-2007 Postdoctoral Scholar, University of Washington and the Center for Nuclear Physics and Astrophysics

Awards and Honours:

- 2016 Distinguished Achievement College-Level Awards in Teaching, The Association of Former Students, Texas A&M University
- 2011-2016 P.I. of DOE Early Career Award ER41747 "*Precision tests of the electroweak interaction using trapped atoms and ions*"
- 2010-2014 Co-P.I. of DOE grant ER41710 "*Laser trapping and cooling facility for weak interaction experiments with Francium at TRIUMF*"
- 2006 Best Nuclear Physics Ph.D. Thesis Prize in 2005 and 2006, Division on Nuclear Physics, Canadian Association of Physicists

Recent Peer-Reviewed Publications:

- B. Fenker, J.A. Behr, [D. Melconian](#), R.M.A. Anderson, M. Anholm, D. Ashery, R.S. Behling, I. Cohen, I. Craiciu, J.M. Donohue, C. Farfan, D. Friesen, A. Gorelov, J. McNeil, M. Mehlman, H. Norton, K. Olchanski, S. Smale, O. Thériault, A.N. Vantghem and C.L. Warner, "*Precision measurement of the nuclear polarization in laser-cooled, optically pumped ^{37}K* ," *New Journal of Physics* **18**, 073028 (2016). ([url](#))
- E. Uberseder, G.V. Rogachev, V.Z. Goldberg, E. Koshchiy, B.T. Roeder, M. Alcorta, G. Chubarian, B. Davids, C. Fu, J. Hooker, H. Jayatissa, [D. Melconian](#) and R.E. Tribble, "*Nuclear structure beyond the neutron drip line: The lowest energy states in ^9He via their $T=5/2$ isobaric analogs in ^9Li* ," *Physics Letters B* **754**, 323 (2016). ([url](#))
- M. Mehlman, P.D. Shidling, R. Burch, E. Bennett, B. Fenker and [D. Melconian](#), "*Status of the TAMUTRAP facility and initial characterization of the RFQ cooler/buncher*," *Hyperfine Interactions* **235**, 77 (2015). ([url](#))
- A. García, S.K.L. Sjøe, H.E. Swanson, C. Wrede, [D. Melconian](#), A. Algora and I. Ahmad, "*Decay studies for neutrino physics*," *Hyperfine Interactions* **223**, 201 (2014). ([url](#))
- P.D. Shidling, [D. Melconian](#), S. Behling, B. Fenker, J.C. Hardy, V.E. Jacob, E. McCleskey, M. McCleskey, M. Mehlman, H.I. Park, and B.T. Roeder, "*Precision half-life measurement of the β^+ decay of ^{37}K* ," *Physical Review C* **90**, 032501(R) (2014). ([url](#))
- J.A. Behr, A. Gorelov, K.P. Jackson, M.R. Pearson, M. Anholm, T. Kong, R.S. Behling, B. Fenker, [D. Melconian](#), D. Ashery and G. Gwinner, "*TRINAT: measuring β -decay correlations with laser-trapped atoms*," *Hyperfine Interactions* **225**, 115 (2014). ([url](#))
- [D. Melconian](#), R.S. Behling, B. Fenker, M. Mehlman, P.D. Shidling, M. Anholm, D. Ashery, J.A. Behr, A. Gorelov, G. Gwinner, K. Olchanski and S. Smale, "*Progress towards precision measurements of β -decay correlation parameters using atom and ion traps*," *Proceedings of Science X LASNPA* (2014). ([url](#))
- M. Mehlman, P.D. Shidling, S. Behling, L.G. Clark, B. Fenker and [D. Melconian](#), "*Design of a unique open-geometry cylindrical Penning trap*," *Nuclear Instruments and Methods A* **712**, 9 (2013). ([url](#))
- M.P. Mendenhall, et al., (UCNA Collaboration), "*Precision measurement of the neutron beta-decay asymmetry*," *Physical Review C* **87**, 032501(R) (2013). ([url](#))
- A. Saunders, et al., (UCNA Collaboration), "*Performance of the Los Alamos National Laboratory spallation-driven solid-deuterium ultra-cold neutron source*," *Review of Scientific Instruments* **84**, 013304 (2013). ([url](#))

- [D. Melconian](#), S. Triambak, C. Bordeanu, A. García, J.C. Hardy, V.E. Jacob, N. Nica, H.I. Park, G. Tabacaru, L. Trache, I.S. Towner, R.E. Tribble and Y. Zhai, “ β decay of ^{32}Cl : Precision γ -ray spectroscopy and a measurement of isospin-symmetry breaking,” *Physical Review C* **85**, 025501 (2012). ([url](#))
- C. Wrede, A. García, [D. Melconian](#), S. Triambak and B.A. Brown, “ γ -constraints on the properties of unbound ^{32}Cl levels,” *Physical Review C* **86**, 047305 (2012). ([url](#))
- S. Aubin, E. Gomez, J.A. Behr, M.R. Pearson, D. Sheng, J. Zhang, R. Collister, D. Melconian, Y. Zhao, V.V. Flambaum, G.D. Sprouse, L.A. Orozco and G. Gwinner, “Atomic parity non-conservation in francium: the FrPNC experiment at TRIUMF,” *Il Nuovo Cimento C* **35**, 85 (2012). ([url](#))
- [D. Melconian](#), S. Triambak, C. Bordeanu, A. García, J.C. Hardy, V.E. Jacob, N. Nica, H.I. Park, G. Tabacaru, L. Trache, I.S. Towner, R.E. Tribble and Y. Zhai, “Experimental validation of the largest calculated isospin-symmetry-breaking effect in a superallowed Fermi decay,” *Physical Review Letters* **107**, 182301 (2011).  ([url](#))
- J. Liu, et al., (UCNA Collaboration), “Determination of the axial-vector weak coupling constant with ultracold neutrons,” *Physical Review Letters* **105**, 181803 (2010). ([url](#))
- A.L. Sallaska, S.A. Hoedl, A. García, [D. Melconian](#), A.R. Young, P. Geltenbort, S.K.L. Sjøe and A.T. Holley, “Characterization of thin-foil ultracold neutron detectors,” *Nuclear Instruments and Methods A* **603**, 421 (2009).
- C.M. Matton, F. Sarazin, C. Andreoiu, A.N. Andreyev, R.A.E. Austin, G.C. Ball, R.S. Chakrawarthy, D. Cross, E.S. Cunningham, J. Daoud, P.E. Garrett, G.F. Grinyer, G. Hackman, [D. Melconian](#), A.C. Morton, C.J. Pearson, J.J. Ressler, J. Schwarzenberg, M.B. Smith and C.E. Svensson, *Physical Review C* **80**, 034318 (2009). ([url](#))
- A.A. Kwiatkowski, B.R. Barquest, G. Bollen, C.M. Campbell, D.L. Lincoln, D.J. Morrissey, G.K. Pang, A.M. Prinke, J. Savory, S. Schwarz, C.M. Folden III, [D. Melconian](#), S.K.L. Sjøe, and M. Block, “Precision test of the isobaric multiplet mass equation for the $A=32$, $T=2$ quintet,” *Physical Review C* **80**, 051302(R) (2009). ([url](#))
- J.R.A. Pitcairn, D. Roberge, A. Gorelov, D. Ashery, O. Aviv, J.A. Behr, P.G. Bricault, M. Dombbsky, J.D. Holt, K.P. Jackson, B. Lee, M.R. Pearson, A. Gaudin, B. Dej, C. Höhr, G. Gwinner, and [D. Melconian](#), “Tensor interaction constraints from β decay recoil spin asymmetry of trapped atoms,” *Physical Review C* **79**, 015501 (2009). ([url](#))
- R.W. Pattie Jr., et al., (UCNA Collaboration), “First measurement of the neutron β -asymmetry with ultracold neutrons,” *Physical Review Letters* **102**, 012301 (2009). ([url](#))
- S.K.L. Sjøe, [D. Melconian](#), A. García, I. Ahmad, A. Algora, J. Äystö, V.-V. Elomaa, T. Eronen, J. Hakala, S. Hoedl, A. Kankainen, T. Kessler, I.D. Moore, F. Naab, H. Penttilä, S. Rahaman, A. Saastamoinen, H. E. Swanson, C. Weber, S. Triambak, and K. Deryckx, “Electron-capture branch of ^{100}Tc and tests of nuclear wave functions for double- β decays,” *Physical Review C* **78**, 064317 (2008). ([url](#))
- M. Bhattacharya, [D. Melconian](#), A. Komives, S. Triambak, A. García, E.G. Adelberger, B.A. Brown, M.W. Cooper, T. Glasmacher, V. Guimaraes, P.F. Mantica, A.M. Oros-Peusquens, J.I. Prisciandoro, M. Steiner, H.E. Swanson, S.L. Tabor and M. Wiedeking, “ ft value of the $0^+ \rightarrow 0^+ \beta^+$ decay of ^{32}Ar : a measurement of isospin symmetry breaking in a superallowed decay,” *Physical Review Letters* **100**, 192504 (2008). ([url](#))
- K.G. Leach, C.E. Svensson, G.C. Ball, J.R. Leslie, R.A.E. Austin, D. Bandyopadhyay, C. Barton, E. Bassiachvilli, S. Ettenauer, P. Finlay, P.E. Garrett, G.F. Grinyer, G. Hackman, D. Melconian, A.C. Morton, S. Mythili, O. Newman, C.J. Pearson, M.R. Pearson, A.A. Phillips, H. Savajols, M.A. Schumaker and J. Wong, “Internal γ decay and the superallowed branching ratio for the β^+ emitter $^{37}\text{K}^m$,” *Physical Review Letters* **100**, 192504 (2008). ([url](#))
- [D. Melconian](#), J.A. Behr, D. Ashery, O. Aviv, P.G. Bricault, M. Dombbsky, S. Fostner, A. Gorelov, S. Gu, V. Hanemaayer, K.P. Jackson, M.R. Pearson and I. Vollrath, “Measurement of the neutrino asymmetry in the β decay of laser-cooled, polarized ^{37}K ,” *Physics Letters B* **649**, 370 (2007). ([url](#))
- T.A.D. Brown, C. Bordeanu, K.A. Snover, D.W. Storm, [D. Melconian](#), A.L. Sallaska, S.K.L. Sjøe and S. Triambak, “ $^3\text{He} + ^4\text{He} \rightarrow ^7\text{Be}$ astrophysical S factor,” *Physical Review C* **76**, 055801 (2007). ([url](#))
- S. Triambak, A. García, [D. Melconian](#), M. Mella and O. Biesel, “Excitation energies in ^{33}Cl via $^{32}\text{S}(p, \gamma)$,” *Physical Review C* **74**, 054306 (2006). ([url](#))
- S. Triambak, A. García, E.G. Adelberger, G.J.P. Hodges, [D. Melconian](#), H.E. Swanson, S.A. Hoedl, S.K.L. Sjøe, A.L. Sallaska and H. Iwamoto, *Physical Review C* **73**, 054313 (2006). ([url](#))