

Ricardo O. Alarcón

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Education

- University of Illinois, Urbana, IL, Post-Doctoral Research Associate in nuclear physics (mentors: Robert Eisenstein and Alan Nathan), 1985-88.
- Ohio University, Athens, OH, Ph.D. in physics (advisor: Jack Rapaport), 1985.
- University of Chile, Santiago, Chile, M.S. in physics (advisor: Carlos Graham), 1980.
- University of Chile, Santiago, Chile, B.S. in physics, 1978.

Professional Positions

- President's Professor, Arizona State University, 2013- present.
- Associate Chair, Department of Physics, Arizona State University, 2009-present.
- Professor of Physics, Arizona State University, 2000-present.
- Visiting Professor, Massachusetts Institute of Technology, 1999-2001.
- Associate Professor of Physics, Arizona State University, 1995-2000.
- Visiting Associate Professor, Massachusetts Institute of Technology, 1996-97.
- Visiting Research Scientist, MIT-Bates Linear Accelerator Center, 1995-96.
- Assistant Professor of Physics, Arizona State University, 1989-95.
- Research Scientist, University of Illinois, 1988-89.

Significant Professional Activities

- Chair, Topical Group on Few-Body Systems and Multiparticle Dynamics, American Physical Society (2014-2018).
- DOE Technical, Cost, Schedule and Management review of the SBS spectrometer, Panel member, Jefferson Laboratory (2012-present).
- Committee on Assessment and Outlook for Nuclear Physics, National Academy of Sciences, National Research Council, Member (2010-2012).
- Committee of Visitors, National Science Foundation, 2012.
- Scientific Assessment of Free Electron Laser (FEL) Technology for Naval Applications Committee, National Academy of Sciences, National Research Council, Member, (2007-2009).
- NSF Nuclear Physics Program Panel, 2009 and 2011.
- Committee on Education, American Physical Society, Division of Nuclear Physics, Member (2007-2013).
- Nominating Committee, Chair, American Physical Society, Division of Nuclear Physics, Member, 2011.
- Rare Isotope Science Assessment Committee (RISAC) of the National Academy of Sciences, National Research Council, Member (2005-2007).
- DOE Technical, Cost, Schedule and Management review of the STAR TOF detector, Panel member, Brookhaven National Laboratory (2005-2008).
- Nuclear Science Advisory Committee (NSAC) for the Department of Energy and the National Science Foundation, Member (2001-2005).
- Executive Committee, Topical Group on Few Body Systems and Multiparticle Dynamics, American Physical Society (2004-2007).
- Project Manager, BLAST project at MIT-Bates (1999–2002).
- Scientific Spokesperson, BLAST Collaboration (2000–2005).
- Member, Committee on Minorities, American Physical Society, (2001-2003).

- Proposal Reviewer for National Science Foundation (NSF), Department of Energy (DOE), National Sciences and Engineering Council of Canada (NSERC), French National Research Agency (ANR), Chilean Foundation for Science and Technology (CONICYT).
- Journal Reviewer for Physical Review Letters and Physical Review, Physics Letters B.

Awards and Honors

- President's Professor, Arizona State University, 2013.
- Outstanding Teaching Award, Department of Physics, Arizona State University, 2010.
- Fellow, American Physical Society, 2003.
- President, Bates Linear Accelerator Users Group Inc., 1998-2001.

Peer-reviewed Publications

1. M.J. Bales, R. Alarcon, C.D. Bass, E.J. Beise, H. Breuer, J. Byrne, T.E. Chupp, K.J. Coakley, R.L. Cooper, M.S. Dewey, S. Gardner, T.R. Gentile, D. He, H.P. Mumm, J.S. Nico, B. O'Neill, A.K. Thompson, and F.E. Wietfeldt, *Precision measurement of the radiative β decay of the free neutron*, Phys. Rev. Lett. 116, 242501 (2016).
2. R. Alarcon, D. Blyth, E. Galyaev, J. Holmes, L. Ice, G. Randall, M. Bues, M. Fatyga, *Detectors for in vivo range and dose verification in proton therapy*, International Journal of Modern Physics: Conference Series 44, 1660217 (2016).
3. R. Alarcon, L. Ice, *Status of the OLYMPUS Experiment*, Proceedings of Science CD15, 071 (2015).
4. K. B. Grammer, R. Alarcon, L. Barrón-Palos, D. Blyth, J. D. Bowman, J. Calarco, C. Crawford, K. Craycraft, D. Evans, N. Fomin, J. Fry, M. Gericke, R. C. Gillis, G. L. Greene, J. Hamblen, C. Hayes, S. Kucuker, R. Mahurin, M. Maldonado-Velázquez, E. Martin, M. McCrea, P. E. Mueller, M. Musgrave, H. Nann, S. I. Penttilä, W. M. Snow, Z. Tang, and W. S. Wilburn, *Measurement of the scattering cross section of slow neutrons on liquid parahydrogen from neutron transmission*, Phys. Rev. B, 91, 180301(R) (2015).
5. R. Milner, D.K. Hasell, M. Kohl, U. Schneekloth, N. Akopov, R. Alarcon, V.A. Andreev, O. Ates, A. Avetisyan, D. Bayadilov, R. Beck, S. Belostotski, J.C. Bernauer, J. Bessuille, F. Brinker, B. Buck, J.R. Calarco, V. Carassiti, E. Cisbani, G.Ciullo, M.Contalbrigo, N.D'Ascenzo, R. De Leo, J. Diefenbach, T.W.Donnely, K. Dow, G. Elbakian, D. Eversheim, S. Frullani, Ch. Funke, G. Gavrillov, B. Gläser, N. Görrissen, J. Hauschildt, B.S.Henderson, Ph.Hoffmeister, Y. Holler, L.D. Ice, A. Izotov, R. Kaiser, G. Karyan, J. Kelsey, D. Khanef, P.Klassen, A. Kiselev, A. Krivshich, I. Lehmann, P. Lenisa, D. Lenz, S. Lumsden, Y. Ma, F. Maas, H. Marukyan, O. Miklukho, A. Movsisyan, M. Murray, Y. Naryshkin, C. O'Connor, R. Perez Benito, R. Perrino, R.P. Redwine, D.Rodríguez Piñeiro, G. Rosner, R.L.Russell, A.Schmidt, B.Seitz, M.Statera, A.Thiel, H.Vardanyan, D. Veretennikov, C.Vidal, A. Winnebeck, V.Yeganov, *The OLYMPUS experiment*, Nucl. Instr. Meth. Phys. Res. A, 741, 1 (2014).
6. R. Alarcon, D. Blyth, *Measurement of the weak nucleon-nucleon interaction by polarized cold neutron capture on protons*, EPJ Web of Conferences, **66**, 05001 (2014).
7. R. Alarcon, S. Balascuta, S.V. Benson, W. Bertozzi, J.R. Boyce, R. Cowan, D. Douglas, P. Evtushenko, P. Fisher, E. Ihloff, N. Kalantarians, A. Kelleher, W.J. Kossler, R. Legg, E. Long, R.G. Milner, G.R. Neil, L. Ou, B. Schmookler, C. Tennant, C. Tschalar, G.P. Williams, S. Zhang, *Measured radiation and background levels during transmission of megawatt electron beams through millimeter apertures*, Nucl. Instr. Meth. Phys. Res. A 729, 233 (2013).
8. R. Alarcon, S. Balascuta, S. Benson, W. Bertozzi, J. Boyce, R. Cowan, D. Douglas, P. Evtushenko, P. Fisher, E. Ihloff, N. Kalantarians, A. Kelleher, R. Legg, R. G. Milner, G. R. Neil, L. Ou, B. Schmookler, C. Tennant, C. Tschalar, G. P. Williams, and S. Zhang, *Transmission of Megawatt Relativistic Electron Beams through Millimeter Apertures*, Phys. Rev. Lett., 111, 164801 (2013).
9. C. Tschalar, R. Alarcon, S. Balascuta, S.V. Benson, W. Bertozzi, J.R. Boyce, R. Cowan, D. Douglas, P. Evtushenko, P. Fisher, E. Ihloff, N. Kalantarians, A. Kelleher, R. Legg, R.G. Milner,

- G.R. Neil, L. Ou, B. Schmookler, C. Tennant, G.P. Williams, and S. Zhang, *Transmission of High-Power Electron Beams Through Small Apertures*, Nucl. Instr. Meth. Phys. Res. A 729, 69 (2013).
10. R. Alarcon and S. Balascuta, *Status of the NPDGamma Experiment at the SNS*, Hyperfine Interactions, 214, 149 (2013).
 11. R.L. Cooper, R. Alarcon, M.J. Bales, C.D. Bass, E.J. Beise, H. Breuer, J. Byrne, T.E. Chupp, K.J. Coakley, M.S. Dewey, C. Fu, T.R. Gentile, H.P. Mumm, J.S. Nico, B. O'Neill, K. Pulliam, A.K. Thompson, F.E. Wietfeldt, *A gamma- and X-ray detector for cryogenic, high magnetic field applications*, Nucl. Instr. Meth. Phys. Res A 691, 64 (2012).
 12. B. T. Tonguc, S. Citci, M. Bektasoglu, and R. Alarcon, *Invariant Mass Distribution of $D(e, e')$ from BLAST*, Balkan Physics Letters, 20, 201039 (2012).
 13. S. Balascuta, R. Alarcon, S. Baeßler, G. Greene, A. Mietke, C. Crawford, R. Milburn, S. Penttila, J. Prince, J. Schaedler, *The Implementation of a Super Mirror Polarizer at the SNS Fundamental Neutron Physics Beamline*, Nucl. Instr. Meth. Phys. Res. A 137, 671 (2012).
 14. J. M. Kirkpatrick, N. F. Sparveris, I. Nakagawa, A. M. Bernstein, R. Alarcon, W. Bertozzi, T. Botto, P. Bourgeois, J. Calarco, F. Casagrande, M. O. Distler, K. Dow, M. Farkondeh, S. Georgakopoulos, S. Gilad, R. Hicks, A. Holtrop, A. Hotta, X. Jiang, A. Karabarounis, S. Kowalski, R. Milner, R. Miskimen, C. N. Papanicolas, A. J. Sarty, Y. Sato, S. Širca, J. Shaw, E. Six, S. Stave, E. Stiliaris, T. Tamae, G. Tsentalovich, C. Tschalaer, W. Turchinets, Z.-L. Zhou, and T. Zwart, *Measurement of the partial cross sections σ_{TT} , σ_{LT} , and $(\sigma_T + \epsilon\sigma_L)$ of the $^1H(e, e'\pi^+)n$ reaction in the $\Delta(1232)$ resonance*, Phys. Rev. C 84 028201 (2011).
 15. P. Bourgeois, Y. Sato, J. Shaw, R. Alarcon, A. M. Bernstein, W. Bertozzi, T. Botto, J. Calarco, F. Casagrande, M. O. Distler, K. Dow, M. Farkondeh, S. Georgakopoulos, S. Gilad, R. Hicks, M. Holtrop, A. Hotta, X. Jiang, A. Karabarounis, J. Kirkpatrick, S. Kowalski, R. Milner, R. Miskimen, I. Nakagawa, C. N. Papanicolas, A. J. Sarty, S. Širca, E. Six, N. F. Sparveris, S. Stave, E. Stiliaris, T. Tamae, G. Tsentalovich, C. Tschalaer, W. Turchinets, Z.-L. Zhou, and T. Zwart, *Measurements of the generalized electric and magnetic polarizabilities of the proton at low Q^2 using the virtual Compton scattering reaction*, Phys. Rev. C 84, 035206 (2011).
 16. A. P. Galvan, B. Plaster, J. Boissevain, R. Carr, B.W. Filippone, M.P. Mendenhall, R. Schmid, R. Alarcon, S. Balascuta, *High uniformity magnetic coil for search of neutron electric dipole moment*, Nucl. Instr. Meth. Phys. Res. A 660, 147 (2011).
 17. C. Crawford, T. Akdogan, R. Alarcon, W. Bertozzi, E. Booth, T. Botto, J.R. Calarco, B. Clasie, A. DeGrush, T.W. Donnelly, K. Dow, M. Farkondeh, R. Fatemi, O. Filoti, W. Franklin, H. Gao, E. Geis, S. Gilad, D. Hasell, P. Karpus, M. Kohl, H. Kolster, T. Lee, E. Lomon, A. Maschinot, J. Matthews, K. McIlhany, N. Meitanis, R. Milner, J. Rapaport, R. Redwine, J. Seely, A. Shinozaki, A. Sindile, S. Širca, E. Six, T. Smith, B. Tonguc, C. Tschalaer, E. Tsentalovich, W. Turchinets, Y. Xiao, W. Xu, C. Zhang, Z. Zhou, V. Ziskin, T. Zwart, *Role of mesons in the electromagnetic form factors of the nucleon*, Phys. Rev. C 82, 045211 (2011).
 18. C. Zhang, M. Kohl, T. Akdogan, R. Alarcon, W. Bertozzi, E. Booth, T. Botto, J. R. Calarco, B. Clasie, C. Crawford, A. DeGrush, K. Dow, M. Farkondeh, R. Fatemi, O. Filoti, W. Franklin, H. Gao, E. Geis, S. Gilad, D. Hasell, P. Karpus, H. Kolster, T. Lee, A. Maschinot, J. Matthews, K. McIlhany, N. Meitanis, R. Milner, J. Rapaport, R. Redwine, J. Seely, A. Shinozaki, A. Sindile, S. Širca, E. Six, T. Smith, B. Tonguc, C. Tschalär, E. Tsentalovich, W. Turchinets, Y. Xiao, W. Xu, Z.-L. Zhou, V. Ziskin, and T. Zwart, *Precise Measurement of Deuteron Tensor Analyzing Powers with BLAST*, Phys. Rev. Lett., 107, 252501 (2011).
 19. D. Hasell, R. Milner, R. Redwine, R. Alarcon, H. Gao, M. Kohl, J. Calarco, *Spin-Dependent Electron Scattering from Polarized Protons and Deuterons with the BLAST Experiment at MIT-Bates*, Ann. Rev. Nucl. Part. Sci. 61, 409 (2011).
 20. M. T. Gericke, R. Alarcon, S. Balascuta, L. Barrón-Palos, C. Blessinger, J. D. Bowman, R. D. Carlini, W. Chen, T. E. Chupp, C. Crawford, S. Covrig, M. Dabaghyan, N. Fomin, S. J. Freedman, T. R. Gentile, R. C. Gillis, G. L. Greene, F. W. Hersman, T. Ino, G. L. Jones, B. Lauss, M. Leuschner, W. R. Lozowski, R. Mahurin, Y. Masuda, J. Mei, G. S. Mitchell, S. Muto, H. Nann, S. A. Page, S. I.

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21. L. Barron-Palos, R. Alarcon, S. Balascuta, C. Blessinger, J.D. Bowman, T.E. Chupp, S. Covrig, C.B. Crawford, M. Dabaghyan, J. Dadrás, M. Dawkins, W. Fox, M.T. Gericke, R.C. Gillis, B. Lauss, M.B. Leuschner, B. Lozowski, R. Mahurin, M. Mason, J. Mei, H. Nann, S.I. Penttilä, W.D. Ramsay, A. Salas-Bacci, S. Santra, P.-N. Seo¹, M. Sharma, T. Smith, W.M. Snow, W.S. Wilburn, V. Yuan, *Determination of the parahydrogen fraction in a liquid hydrogen target using energy-dependent slow neutron transmission*, Nucl. Instr. Meth. Phys. Res. A 659, 579 (2011).
 22. R C Gillis, R Alarcon, S Balascuta, L Barron-Palos, J D Bowman, R D Carlini, W Chen, T E Chupp, C. Crawford, S Covrig, M Dabaghyan, N Fomin, S J Freedman, T R Gentile, M T Gericke, G L Greene, F W Hersman, T Ino, G L Jones, B Lauss, M Leuschner, W R Lozowski, R Mahurin, Y Masuda, J Mei, G S Mitchell, S Muto, H Nann, S A Page, S I Penttila, W D Ramsay, A Salas-Bacci, S Santra, M Sharma, P-N Seo, E I Sharapov, T B Smith, W M Snow, W S Wilburn, V Yuan, *NPDGamma: a measurement of the parity-violating gamma asymmetry A_7 in n - p capture*, Journal of Physics: Conference Series 239, 012012 (2010).
 23. L. Barron-Palos, R. Alarcon, L.P. Alonzi, S. Baeßler, S. Balascuta, J.D. Bowman, M. Bychkov, J.R. Calarco, R.D. Carlini, E. Chavez, W.C. Chen, T.E. Chupp, C. Crawford, Q. Curiel-García, M. Dabaghyan, J. Dadrás, A. Danagoulian, M.C. Estes, N. Fomin, S.J. Freedman, E. Frlez, T.R. Gentile, M.T. Gericke, R.C. Gillis, G.L. Greene, F.W. Hersman, B. Hona, A. Huerta, T. Ino, G.L. Jones, A. Komives, B. Lauss, W. Lee, M. Leuschner, W. Losowski, R. Mahurin, D. Marin-Lambarri, E. Martin, Y. Masuda, J. Mei, G.S. Mitchell, P.E. Mueller, M. Musgrave, S. Muto, H. Nann, M.E. Ortiz, A. Palladino, S. Page, S.I. Penttila, D. Pocanic, J. Prince, D. Ramsay, P. Rodríguez-Zamora, A. Salas-Bacci, S. Santra, P.-N. Seo, E. Sharapov, M. Sharma, T. Smith, W.M. Snow, Z. Tang, S. Vorndran, W.S. Wilburn, M. Whitehead, and V. Yuan, *Measurement of parity-violating neutron capture gamma asymmetries at low-energies*, Revista Mexicana de Fisica, 55 (2), 18-22 (2009).
 24. D. Pocanic, R. Alarcon, L.P. Alonzi, S. Baessler, S. Balascuta, J.D. Bowman, M.A. Bychkov, J. Byrne, J.R. Calarco, V. Cianciolo, C.B. Crawford, E. Frlez, M.T. Gericke, G.L. Greene, R.K. Grzywacz, V. Gudkov, F.W. Hersman, A. Klein, J. Martin, S.A. Page, A. Palladino, S.I. Penttila, K.P. Rykaczewski, W.S. Wilburn, A.R. Young, G.R. Young, *Nab: Measurement Principles, Apparatus and Uncertainties*, Nucl. Instr. Meth. Phys. Res A 611, 211 (2009).
 25. D. Hasell, T. Akdogan, R. Alarcon, W. Bertozzi, E. Booth, T. Botto, J.R. Calarco, B. Clasie, C. Crawford, A. DeGrush, K. Dow, D. Dutta, M. Farkhondeh, R. Fatemi, O. Filoti, W. Franklin, H. Gao, E. Geis, S. Gilad, W. Hersman, M. Holtrop, E. Ihloff, P. Karpus, J. Kelsey, M. Kohl, H. Kolster, S. Krause, T. Lee, A. Maschinot, J. Matthews, K. McIlhany, N. Meitanis, R. Milner, J. Rapaport, R. Redwine, J. Seely, A. Shinozaki, A. Sindile, S. Širca, T. Smith, S. Sobczynski, M. Tanguay, B. Tonguc, C. Tschalaer, E. Tsentalovich, W. Turchinets, J.F.J. van den Brand, J. van der Laan, F. Wang, T. Wise, Y. Xiao, W. Xu, C. Zhang, Z. Zhou, V. Ziskin and T. Zwart, *The BLAST Experiment*, Nuclear Instruments and Methods A, 603, 247-262 (2009).
 26. M. Gericke, S. Page, D. Ramsay, R. Alarcon, S. Balascuta, L. Barron, J.D. Bowman, R.D. Carlini, W. Chen, T.E. Chupp, C. Crawford, S. Covrig, M. Dabaghyan, S.J. Freedman, T.R. Gentile, R.C. Gillis, G.L. Greene, F.W. Hersman, T. Ino, G.L. Jones, B. Lauss, M. Leuschner, B. Losowski, R. Mahurin, Y. Masuda, J. Mei, G.S. Mitchell, S. Muto, H. Nann, S.I. Penttilä, A. Salas-Bacci, S. Santra, P.-N. Seo, E. Sharapov, M. Sharma, T. Smith, W.M. Snow, W.S. Wilburn, V. Yuan, *Parity violation in neutron-proton capture-The NPDGamma experiment*, Nucl. Instr. Meth. Phys. Res. A, 611, 239 (2009).
 27. R. Alarcon, *The BLAST experiment: polarized electron scattering from hydrogen and deuterium*, Modern Physics Letters A, 24, 875 (2009).
 28. E. Geis, M. Kohl, V. Ziskin, T. Akdogan, H. Arenhövel, R. Alarcon, W. Bertozzi, E. Booth, T. Botto, J. Calarco, B. Clasie, C. B. Crawford, A. DeGrush, T. W. Donnelly, K. Dow, M. Farkhondeh, R. Fatemi, O. Filoti, W. Franklin, H. Gao, S. Gilad, D. Hasell, P. Karpus, H. Kolster, T. Lee, A. Maschinot, J. Matthews, K. McIlhany, N. Meitanis, R. G. Milner, J. Rapaport, R. P. Redwine, J.

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29. C. B. Crawford, A. Sindile, T. Akdogan, R. Alarcon, W. Bertozzi, E. Booth, T. Botto, J. Calarco, B. Clasie, A. DeGrush, T. W. Donnelly, K. Dow, D. Dutta, M. Farkhondeh, R. Fatemi, O. Filoti, W. Franklin, H. Gao, E. Geis, S. Gilad, W. Haeblerli, D. Hasell, W. Hersman, M. Holtrop, P. Karpus, M. Kohl, H. Kolster, T. Lee, A. Maschinot, J. Matthews, K. McIlhany, N. Meitanis, R. G. Milner, R. P. Redwine, J. Seely, A. Shinozaki, S. Širca, E. Six, T. Smith, B. Tonguc, C. Tschalaer, E. Tsentalovich, W. Turchinets, J. F. J. van den Brand, J. van der Laan, F. Wang, T. Wise, Y. Xiao, W. Xu, C. Zhang, Z. Zhou, V. Ziskin, and T. Zwart, *Measurement of the Proton's Electric to Magnetic Form Factor Ratio from $H(e,e'p)$* , Phys. Rev. Lett., 98, 052301 (2007).
 30. R. Alarcon, *Fundamental physics with cold and ultracold neutrons*, Revista Mexicana de Fisica, S53, 125-127, (2007).
 31. R. Alarcon, *Nucleon form factors and the BLAST experiment*, European Physical Journal A, 32, 477-481 (2007) and 31, 588-592, (2007).
 32. R. Alarcon, *Spin Dependent Electron Scattering with the BLAST Detector*, Revista Mexicana de Fisica S, 52, 26-29, (2006).
 33. P. Bourgeois, Y. Sato, J. Shaw, R. Alarcon, A. M. Bernstein, W. Bertozzi, T. Botto, J. Calarco, F. Casagrande, M. O. Distler, K. Dow, M. Farkondeh, S. Georgakopoulos, S. Gilad, R. Hicks, M. Holtrop, A. Hotta, X. Jiang, A. Karabarounis, J. Kirkpatrick, S. Kowalski, R. Milner, R. Miskimen, I. Nakagawa, C. N. Papanicolas, A. J. Sarty, S. Sirca, E. Six, N. F. Sparveris, S. Stave, E. Stiliaris, T. Tamae, G. Tsentalovich, C. Tschalaer, W. Turchinets, Z.-L. Zhou, and T. Zwart *Measurements of the Generalized Electric and Magnetic Polarizabilities of the Proton at Low Q^2 Using the Virtual-Compton-Scattering Reaction*, Phys. Rev. Lett., 97, 212001 (2006).
 34. R. Alarcon, *Spin dependent electron scattering with the BLAST detector*, Czechoslovak Journal of Physics, 55, A93--A98 (2005).
 35. B. Tonguc, R. Alarcon, T. Botto, J. Calarco, A. DeGrush, O. Filoti, E. Geis, J. Kelsey, J. Prince, E. Six, C. Vidal, *The BLAST Cherenkov detectors*, Nucl. Instr. and Meth. Phys. Res., A 553, 364 (2005).
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