

# Curriculum Vitae

## Professor Daniel Phillips

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Date of Birth: 19th April 1972

## EDUCATION

### *Undergraduate:*

Flinders University of South Australia, Adelaide, Australia

Degree: B.Sc., December 1990  
Major: Theoretical Physics  
Awards: Earth Sciences Book Prize for best First Year student (1988)  
SA Chamber of Commerce and Industry Prize for best 1st Year Science student overall (1988)  
Chancellor's Letter of Commendation (1988)  
Chancellor's Letter of Commendation (1989)  
Silver Bragg Medal for best 3rd Year Physics student at Flinders (1990)  
Chancellor's Letter of Commendation (1990)

### *Honours:*

Flinders University of South Australia, Adelaide, Australia

Degree: B.Sc. (Hons.), December 1991  
Field: Theoretical Physics  
Advisor: Prof. R. T. Cahill  
Thesis: "Deriving the Copenhagen Interpretation from the Schrödinger Equation"  
Honors: University Medal for best Honours student in School of Physical Sciences  
HECS Exemption Scholarship

### *Postgraduate:*

Flinders University of South Australia, Adelaide, Australia

Degree: Ph. D., December 1995  
Field: Theoretical Nuclear Physics  
Advisor: Prof. I. R. Afnan  
Thesis: "The Coupled-Channels Problem in Field Theory:  
The  $NN - \pi NN$  System"  
Honors: Flinders University Overseas Travelling Fellowship  
Amy Forwood Award  
State Bank Travelling Award  
HECS Exemption Scholarship

## EMPLOYMENT

Theory Group for Quarks, Hadrons and Nuclei  
Department of Physics  
University of Maryland, College Park

Postdoctoral Research Associate, September 1995–August 1998

Nuclear Theory Group  
Department of Physics  
University of Washington, Seattle

Research Assistant Professor, August 1998–August 2000

Department of Physics and Astronomy  
Ohio University, Athens, Ohio 45701, USA

Assistant Professor, August 2000–August 2004

Associate Professor, August 2004–August 2009

Professor, August 2009–

School of Physics and Astronomy  
University of Manchester, Manchester, M20 6DG, UK

Visiting Researcher, July 2008–October 2008

Helmholtz Institut für Strahlen und Kernphysik  
Universität Bonn, Bonn, Germany

Visiting Professor, March 2009–July 2009

## PROFESSIONAL EXPERIENCES

### Conference/Workshop organization

- Organizer (together with S. Bacca, S. Pastore, and R. Hill), Institute for Nuclear Theory Program on “Fundamental Physics with Electroweak Probes of Light Nuclei”, Seattle, WA, Summer 2018.
- Conference co-chair (together with C. Elster and C. Roberts), 21st International Conference on Few-body Problems in Physics, Chicago, IL, May 2015.
- Organizer (together with M. Safronova, M. Snow, and C. Ticknor), APS April meeting pre-workshop on “Tests of Fundamental Symmetries”, Baltimore, MD, April 2015.
- Organizer (together with E. Epelbaum, A. Parreño, and J. Soto), Benasque Center for Science Workshop on “Bound States and Resonances in Effective Field Theories”, Benasque, Spain, July 2014.
- Organizer (together with C. Elster and C. Roberts), Mid-West Theory Get-together, Argonne National Laboratory, Chicago, IL, September 2012.
- Organizer (together with H.-W. Hammer and M. J. Savage), Institute for Nuclear Theory Program on “Simulations and Symmetries: Cold Atoms, QCD, and Few-Hadron Systems”, Seattle, WA, Spring 2010.
- Organizer (together with V. Pascalutsa), ECT\* workshop on “Bound states and resonances in effective field theories”, Trento, Italy, October 2008.
- Organizer (together with D. Blume, C. Greene, and F. Ferlino), Institute for Nuclear Theory Workshop on “Few-body Universality: Recent Experimental and Theoretical Developments”, Seattle, WA, May 2014.
- Organizer (together with H. Gao, W. Glöckle, and A. Nathan), Institute for Nuclear Theory Workshop on “Soft Photons and Light Nuclei”, Seattle, WA, June 2008.
- Working Group Convenor, 2006 Workshop on Chiral Dynamics, Duke University, Durham, NC, September 2006.
- Chair, 2004 Gordon Research Conference on Photonuclear Reactions, Tilton, NH, August 2004.
- Organizer (together with C. Elster and C. Bennhold), Workshop on “Dynamical Approaches to Meson Photoproduction”, Ohio University, Athens, OH, June 2003.
- Vice-Chair, 2002 Gordon Research Conference on Photonuclear Reactions, Tilton, NH, August 2002.

**Refereeing/reviews**

Journal articles: Physical Review C; Physical Review D; Physical Review A; Physical Review X; Physical Review Letters; Nuclear Physics A; Journal of Physics G; Physics Letters B; Modern Physics Letters A; International Journal of Modern Physics; European Physical Journal A, European Physical Journal C; American Journal of Physics; Annals of Physics; Few-body Systems.

- Grant Proposals: National Science Foundation: Experimental Nuclear Physics program, Theoretical Nuclear Physics program; U. S. Department of Energy; Civilian Research and Development Foundation; U. S.-Israeli Bi-national Science Foundation; Deutsche Forschungsgemeinschaft.
- Panel review: Member, Committee of Visitors, NSF Physics Program, Division of Mathematical and Physical Sciences, 2012;  
Member, Department of Energy Review Panel for the November 2005 Review of the Triangle Universities Nuclear Laboratory;  
Chair, Panel for National Science Foundation Theoretical Nuclear Physics program, 2005;  
Member, Department of Energy Review Panel for the November 2002 Review of the Triangle Universities Nuclear Laboratory.
- Book review: Commissioned to write book review for Thomson Learning on “Mathematical Methods for Physicists”, by Susan Lea.  
Commissioned to write chapter review for Tipler and Mosca “Physics”, 6th edition.  
Book proposal reviewer for Cambridge University Press, World Scientific.

**National/International Memberships and Service**

- Member, Nuclear Science Advisory Committee, 2016-
- Chair, National Advisory Committee for Institute for Nuclear Theory, 2015-6
- Vice-Chair, Chair-Elect, Chair, Past-Chair, APS Few-body Topical Group, 2012-6
- Member, National Advisory Committee for Institute for Nuclear Theory, 2013-4
- Member, APS Division of Nuclear Physics Dissertation Award Committee, 2012
- Member, MAX-Lab, Lund, Sweden, Program Advisory Committee, 2008-16
- Member, DNP Nomination Committee, 2006
- Member, APS Few-body Topical Group Nomination Committee, 2010
- Member, Executive Committee of Few-Body Systems Topical Group of the APS, 2002–2005

- Member, American Physical Society, 1993–; APS Divisions/Topical Groups enrolled in: Nuclear Physics, Few-Body Systems, Hadron Physics
- Member, Australian Institute of Physics, 1991–98
- Member, SA Branch Committee of Australian Institute of Physics, 1992–4; served on Meetings Sub-committee (1992) and Editorial Sub-committee (1993–4)
- Inaugural President of Flinders University Physics Club (Flinders Chapter of AIP), 1992–3

### **Notable service at Ohio University**

- Chair, Experimental Nuclear Physics Search Committee, 2015-6
- Chair, Department of Physics & Astronomy Promotion and Tenure Committee, 2015-6
- Director, Institute of Nuclear and Particle Physics, 2014-
- Co-ordinator, Knowing the Future Curricular Theme, 2013-7
- Graduate Chair, Department of Physics & Astronomy, 2007-8, 2011-4
- Chair, Department of Physics & Astronomy Graduate Curriculum Committee, 2004-6, 2009-11
- Chair, Committee on Arts & Sciences College Office Budget, 2010
- Chair, Departmental Futures Committee, 2006
- Interim Graduate Chair, 2006-7
- Member, Promotion and Tenure Committee, Department of Environmental and Plant Biology, 2016-7
- Member, Arts and Sciences Faculty Awards Committee, 2016-8
- Member, Curricular Themes Steering Committee, 2013-7
- Member, Provost's Undergraduate Research Fund Committee, 2013-7
- Member, Experimental Nuclear Physics Search Committee, 2012-3
- Member, Departmental Advisory Committee, 2011-
- Member, Faculty Senate Committee on Promotion and Tenure Appeal, 2010
- Member, Ohio University Research Council, 2005–2007

## HONORS

- Presidential Research Scholar, Ohio University, 2017
- Honors Tutorial College Distinguished Mentor Award, Ohio University, 2015
- Outstanding Referee, Physical Review and Physical Review Letters, 2014
- Jeanette G. Grasselli Brown Teaching Award, Ohio University, 2012
- Mercator Professor, Bonn University, 2009
- Fellow, American Physical Society, 2008
- Distinguished Alumni Award, Flinders University of South Australia, 2008
- Miura Visiting Professor, Chubu University, 2006
- Department of Energy Outstanding Junior Investigator, 2002–2005

## RESEARCH FUNDING

- “Nuclear dynamics and astrophysics in few- and many-body systems”, co-PI with C. Elster and M. Prakash, United States Department of Energy, \$1,180,000 November 1, 2016–October 31, 2019.
- “Focused Research Hub in Theoretical Physics: Network for Neutrinos, Nuclear Astrophysics, and Symmetries (N3AS)”, National Science Foundation, Haxton, W. (UC Berkeley, PI), together with fifteen other scientists from eleven institutions including D. R. Phillips, \$959,198.00, September 15, 2016-August 31, 2018. Note that this funding flows through UC, Berkeley so no money was awarded to Ohio University.
- “Nuclear dynamics and astrophysics in few- and many-body systems”, co-PI with C. Elster and M. Prakash, United States Department of Energy, \$1,100,000 November 1, 2013–October 31, 2016.
- Travel to Germany in Summer 2013-4, GAUSTEQ program, Jefferson Science Associates, \$5,840.00.
- “Nuclear dynamics and astrophysics in few- and many-body systems”, co-PI with C. Elster and M. Prakash, United States Department of Energy, \$1,100,000 November 1, 2010–October 31, 2013.
- “Nuclear dynamics and astrophysics in few- and many-body systems”, co-PI with C. Elster and M. Prakash, United States Department of Energy, \$1,100,000, November 1, 2007–October 31, 2010.

- “Hadronic and electromagnetic reactions as probes of nuclear dynamics”, co-PI with C. Elster and L. E. Wright, United States Department of Energy, \$540,000, November 1, 2004–October 31, 2007.
- “Structure of the Universe from Quarks to Superclusters”, Ohio University University Research Priorities process, co-PI with eleven other Nuclear/Particle Physics and Astrophysics faculty, \$1,342,000, July 1, 2004–June 30 2009.
- Glidden Visiting Professorship for Roxanne Springer, 2007-8, \$8,000.
- Ohio University Post-doctoral Fellowship, for Lucas Platter, 2006-7, \$25,000.
- “Travel costs for 2004 Gordon Research Conference on Photonuclear Reactions”, National Science Foundation, \$5,500.
- “Few-nucleon systems in the laboratory, supernovae, and the cosmos”, United States Department of Energy Outstanding Junior Investigator Award, \$183,000, July 1, 2002–June 30, 2005.
- “Hadronic and electromagnetic reactions as probes of nuclear dynamics”, co-PI with C. Elster and L. E. Wright, United States Department of Energy, \$473,000, November 1, 2001–October 31, 2004.

## PUBLICATIONS, COLLOQUIA, SEMINARS AND CONFERENCES

## Papers In Refereed Journals, Book Chapters

1. THE CLASSIFICATION OF DIAGRAMS IN PERTURBATION THEORY, D. R. Phillips and I. R. Afnan, *Ann. Phys. (N.Y.)* **240** (1995) 266–314.
2. COVARIANT FOUR-DIMENSIONAL SCATTERING EQUATIONS FOR THE  $NN - \pi NN$  SYSTEM, D. R. Phillips and I. R. Afnan, *Ann. Phys. (N.Y.)* **247** (1996) 19–77.
3. RELATIVISTIC BOUND STATE EQUATIONS IN THREE DIMENSIONS, D. R. Phillips and S. J. Wallace, *Phys. Rev. C* **54** (1996), 507–522.
4. SOLVING THE FOUR-DIMENSIONAL  $NN - \pi NN$  EQUATIONS FOR SCALARS BELOW MESON-PRODUCTION THRESHOLD, D. R. Phillips and I. R. Afnan, *Phys. Rev. C* **54** (1996), 1542–1560.
5. HOW SHORT IS TOO SHORT? CONSTRAINING ZERO-RANGE INTERACTIONS IN NUCLEON-NUCLEON SCATTERING, D. R. Phillips and T. D. Cohen, *Phys. Lett.* **B390** (1997), 7–12.
6. THE LOW-ENERGY INTERACTION OF COMPOSITE SPIN-HALF SYSTEMS WITH SCALAR AND VECTOR FIELDS, D. R. Phillips, M. C. Birse, and S. J. Wallace, *Phys. Rev. C* **55** (1997), 1937–1945.
7. SHORT-RANGE INTERACTIONS IN AN EFFECTIVE FIELD THEORY APPROACH FOR NUCLEON-NUCLEON SCATTERING, K. A. Scaldeferri, D. R. Phillips, C.-W. Kao, and T. D. Cohen, *Phys. Rev. C* **56** (1997), 679–688.
8. NON-PERTURBATIVE REGULARIZATION AND RENORMALIZATION: SIMPLE EXAMPLES FROM NON-RELATIVISTIC QUANTUM MECHANICS, D. R. Phillips, S. R. Beane, and T. D. Cohen, *Ann. Phys. (N.Y.)* **263**, 255 (1998).
9. A COVARIANT GAUGE-INVARIANT THREE-DIMENSIONAL DESCRIPTION OF RELATIVISTIC BOUND STATES, D. R. Phillips and S. J. Wallace, *Few Body Syst.* **24** (1998), 175–191.
10. THE POTENTIAL OF EFFECTIVE FIELD THEORY FOR NN SCATTERING, S. R. Beane, T. D. Cohen, and D. R. Phillips, *Nucl. Phys* **A632** (1998), 445–469.
11. ELECTRON DEUTERON SCATTERING IN A CURRENT CONSERVING DESCRIPTION OF RELATIVISTIC BOUND STATES: FORMALISM AND IMPULSE APPROXIMATION CALCULATIONS, D. R. Phillips, N. K. Devine, and S. J. Wallace, *Phys. Rev. C* **58** (1998), 2261–2282.
12. SCHEMING IN DIMENSIONAL REGULARIZATION, D. R. Phillips, S. R. Beane, and M. C. Birse, *J. Phys. A* **32**, 3397–3407 (1999).



13. COMPTON SCATTERING ON THE DEUTERON IN BARYON CHIRAL PERTURBATION THEORY, S. R. Beane, M. Malheiro, D. R. Phillips, and U. van Kolck, Nucl. Phys. **A656**, 367–399 (1999).
14. DEUTERON ELECTROMAGNETIC PROPERTIES AND THE VIABILITY OF EFFECTIVE FIELD THEORY METHODS IN THE TWO-NUCLEON SYSTEM, D. R. Phillips and T. D. Cohen, Nucl. Phys. **A668**, 45–82 (2000).
15. IMPROVING THE CONVERGENCE OF NN EFFECTIVE FIELD THEORY, D. R. Phillips, G. Rupak, M. J. Savage, Phys. Lett. **B473**, 209–218 (2000).
16. RESTORATION OF ROTATIONAL INVARIANCE OF BOUND STATES ON THE LIGHT FRONT, J. R. Cooke, G. A. Miller, D. R. Phillips, Phys. Rev. C **61**, 064005 (2000).
17. NUMERICAL RENORMALIZATION USING DIM REG: A SIMPLE TEST CASE IN THE LIPPMANN-SCHWINGER EQUATION, D. R. Phillips, I. R. Afnan, A. G. Henry-Edwards, Phys. Rev. C **61**, 044002 (2000).
18. NEUTRINO AND AXION EMISSIVITIES OF NEUTRON STARS FROM NUCLEON-NUCLEON SCATTERING DATA, C. Hanhart, D. R. Phillips, S. Reddy, Phys. Lett. B **499**, 9–15 (2001).
19. EXTRA DIMENSIONS, SN1987a, AND NUCLEON-NUCLEON SCATTERING DATA, C. Hanhart, D. R. Phillips, S. Reddy, M. J. Savage, Nucl. Phys. **B595**, 335–359 (2001).
20. FROM HADRONS TO NUCLEI: CROSSING THE BORDER, S. R. Beane, P. F. Bedaque, W. C. Haxton, D. R. Phillips, M. J. Savage, in “At the frontier of particle physics”, M. Shifman ed. (World Scientific, Singapore, 2001), pp. 133–269.
21. THE LIKELIHOOD OF GODS’ EXISTENCE: IMPROVING THE SN1987a CONSTRAINT ON THE SIZE OF LARGE COMPACT DIMENSIONS, C. H. Hanhart, J. A. Pons, D. R. Phillips, S. Reddy, Phys. Lett. B **509**, 1–9 (2001).
22. BUILDING LIGHT NUCLEI FROM NEUTRONS, PROTONS, AND PIONS, D. R. Phillips, Czech. J. Phys. **52**, B49–B101 (2002).
23. THE S-WAVE PION-NUCLEON SCATTERING LENGTHS FROM PIONIC ATOMS USING EFFECTIVE FIELD THEORY, S. R. Beane, V. Bernard, E. Epelbaum, U.-G. Meißner, D. R. Phillips, Nucl. Phys. **A720**, 399–415 (2003).
24. EFFECTIVE THEORY OF THE  $\Delta(1232)$  IN COMPTON SCATTERING OFF THE NUCLEON, V. Pascalutsa, D. R. Phillips, Phys. Rev. C **67**, 055202 (2003).
25. HIGHER-ORDER CALCULATIONS OF ELECTRON DEUTERON SCATTERING IN NUCLEAR EFFECTIVE THEORY, D. R. Phillips, Phys. Lett. B **567**, 12–22 (2003).

26. NUCLEON POLARIZABILITIES FROM LOW-ENERGY COMPTON SCATTERING, S. R. Beane, M. Malheiro, J. A. McGovern, D. R. Phillips, U. van Kolck, Phys. Lett. B **567**, 200–206 (2003).
27. SUPERNOVAE AND LIGHT NEUTRALINOS: SN1987A BOUNDS ON SUPERSYMMETRY REVISITED, H. K. Dreiner, C. Hanhart, U. Langenfeld, D. R. Phillips, Phys. Rev. D **68**, 055004 (2003).
28. MODEL-INDEPENDENT EFFECTS OF DELTA EXCITATION IN NUCLEON SPIN POLARIZABILITIES, V. Pascalutsa, D. R. Phillips, Phys. Rev. C, **58**, 055205 (2003).
29. THE THREE-BODY PROBLEM WITH SHORT-RANGE FORCES: RENORMALIZED EQUATIONS AND REGULATOR-INDEPENDENT RESULTS. I. R. Afnan, D. R. Phillips, Phys. Rev. C **69**, 034010 (2004).
30. COMPTON SCATTERING ON THE PROTON, NEUTRON, AND DEUTERON IN CHIRAL PERTURBATION THEORY TO  $O(Q^4)$ . S. R. Beane, M. Malheiro, J. A. McGovern, D. R. Phillips and U. van Kolck, Nucl. Phys. **A747**, 311 (2005).
31. EXPLICIT DELTA(1232) DEGREES OF FREEDOM IN COMPTON SCATTERING OFF THE DEUTERON. R. P. Hildebrandt, H. W. Griebhammer, T. R. Hemmert and D. R. Phillips, Nucl. Phys. **A748**, 573 (2005).
32. PREDICTIONS FOR POLARIZED-BEAM/VECTOR-POLARIZED-TARGET OBSERVABLES IN ELASTIC COMPTON SCATTERING ON THE DEUTERON, D. Choudhury, D. R. Phillips, Phys. Rev. C **71**, 044002 (2005).
33. ELECTRON-DEUTERON SCATTERING IN THE EQUAL-TIME FORMALISM: BEYOND THE IMPULSE APPROXIMATION, D. R. Phillips, S. J. Wallace, N. K. Devine, Phys. Rev. C **72**, 014006 (2005).
34. CHIRAL PERTURBATION THEORY FOR ELECTROWEAK REACTIONS ON DEUTERIUM, D. R. Phillips, J. Phys. **G31**, S1263 (2005).
35. DELTA EFFECTS IN PION-NUCLEON SCATTERING AND THE STRENGTH OF THE TWO-PION-EXCHANGE THREE-NUCLEON INTERACTION, V. R. Pandharipande, D. R. Phillips, U. van Kolck, Phys. Rev. C **71**, 064002 (2006).
36. USING CHIRAL PERTURBATION THEORY TO EXTRACT THE NEUTRON-NEUTRON SCATTERING LENGTH FROM  $\pi^-d \rightarrow nn\gamma$ , A. Gårdestig, D. R. Phillips, Phys. Rev. C **73**, 014002 (2006).
37. THE NEAR-THRESHOLD  $NN \rightarrow d\pi$  REACTION IN CHIRAL PERTURBATION THEORY, A. Gårdestig, D. R. Phillips, C. Elster, Phys. Rev. C **73**, 024002 (2006).
38. HOW LOW-ENERGY WEAK REACTIONS CAN CONSTRAIN THREE-NUCLEON FORCES AND THE NEUTRON-NEUTRON SCATTERING LENGTH, A. Gårdestig, D. R. Phillips, Phys. Rev. Lett. **96**, 232301 (2006).

39. THE THREE-BOSON SYSTEM AT NEXT-TO-NEXT-TO-LEADING ORDER, L. Platter and D. R. Phillips, *Few-Body Systems* **40**, 35 (2006).
40. DEUTERON MATRIX ELEMENTS IN CHIRAL EFFECTIVE THEORY AT LEADING ORDER, L. Platter and D. R. Phillips, *Phys. Lett.* **B641**, 164 (2006).
41. CHIRAL EFFECTIVE THEORY PREDICTIONS FOR DEUTERON FORM FACTOR RATIOS AT LOW  $Q^2$ , D. R. Phillips, *J. Phys. G* **34**, 365 (2007).
42. INVESTIGATING NEUTRON POLARIZABILITIES THROUGH COMPTON SCATTERING ON HELIUM-3, D. Choudhury , A. Nogga , D. R. Phillips, *Phys. Rev. Lett.* **98** 232303 (2007).
43. PION-MASS DEPENDENCE OF THREE-NUCLEON OBSERVABLES, H.-W. Hammer, D. R. Phillips, L. Platter, *Eur. Phys. J.* **A32**, 335 (2007).
44. MUON PRODUCTION IN LOW-ENERGY ELECTRON-NUCLEON AND ELECTRON-NUCLEUS SCATTERING, P. Jaikumar, D. R. Phillips, L. Platter, M. Prakash, *Phys. Rev. D* **76**, 115001 (2007).
45. SUBTRACTIVE RENORMALIZATION OF THE NN SCATTERING AMPLITUDE AT LEADING ORDER IN CHIRAL EFFECTIVE THEORY, C.-J. Yang, C. Elster, D. R. Phillips, *Phys. Rev. C*, **77**, 014002 (2007).
46. DEUTERON FORM FACTORS IN CHIRAL EFFECTIVE THEORY: REGULATOR-INDEPENDENT RESULTS AND THE ROLE OF TWO-PION EXCHANGE, M. Pavon Valderrama, A. Nogga, E. Ruiz Arriola, D. R. Phillips, *Eur. Phys. J* **A36**, 315 (2008).
47. CHIRAL POTENTIALS, PERTURBATION THEORY, AND THE  $^1S_0$  CHANNEL OF NN SCATTERING, D. Shukla, D. R. Phillips, E. Mortenson, *J. Phys.* **G35**, 115009 (2008).
48. BAYESIAN METHODS FOR PARAMETER ESTIMATION IN EFFECTIVE FIELD THEORIES, M. R. Schindler, D. R. Phillips, *Annals Phys.* **324**, 682 (2009) [Erratum-ibid. **324**, 2051 (2009)].
49. RANGE CORRECTIONS TO THREE-BODY OBSERVABLES NEAR A FESHBACH RESONANCE, L. Platter, C. Ji, and D. R. Phillips, *Phys. Rev. A* **79**, 022702 (2009).
50. ANALYZING THE EFFECTS OF NEUTRON POLARIZABILITIES IN COMPTON SCATTERING OFF  $^3\text{He}$ , D. Shukla, A. Nogga, D. R. Phillips, *Nucl. Phys.* **A819**, 98 (2009).
51. AN EFFECTIVE FIELD THEORY ANALYSIS OF PARITY VIOLATION IN LOW-ENERGY NUCLEON-NUCLEON SCATTERING, D. R. Phillips, M. R. Schindler, and R. P. Springer, *Nucl. Phys.* **A822**, 1 (2009).

52. SUBTRACTIVE RENORMALIZATION OF THE CHIRAL POTENTIALS UP TO NEXT-TO-NEXT-TO-LEADING ORDER IN HIGHER NN PARTIAL WAVES, C-J. Yang, C. Elster, and D. R. Phillips, Phys. Rev. C **80**, 034002 (2009).
53. THE CHIRAL STRUCTURE OF THE NEUTRON AS REVEALED IN ELECTRON AND PHOTON SCATTERING, D. R. Phillips, J. Phys. G **36**, 104004 (2009).
54. SUBTRACTIVE RENORMALIZATION OF THE NN INTERACTION IN CHIRAL EFFECTIVE THEORY UP TO NEXT-TO-NEXT-TO-LEADING ORDER: S WAVES, C. J. Yang, C. Elster and D. R. Phillips, Phys. Rev. C **80**, 044002 (2009).
55. BEYOND UNIVERSALITY IN THREE-BODY RECOMBINATION: AN EFFECTIVE FIELD THEORY TREATMENT, C. Ji, D. R. Phillips, and L. Platter, Europhys. Lett. **92**, 13003 (2010).
56. PRECISION CALCULATION OF THE  $\pi^-$ -D SCATTERING LENGTH AND ITS IMPACT ON THRESHOLD  $\pi$ N SCATTERING, V. Baru, C. Hanhart, M. Hoferichter, B. Kubis, A. Nogga and D. R. Phillips, Phys. Lett. B **694**, 473 (2011).
57. ELECTRIC PROPERTIES OF THE BERYLLIUM-11 SYSTEM IN HALO EFT, H. -W. Hammer and D. R. Phillips, Nucl. Phys. A **865**, 17 (2011).
58. CONSTRAINING THE NEUTRON-NEUTRON SCATTERING LENGTH USING THE EFFECTIVE FIELD THEORY WITHOUT EXPLICIT PIONS, J. Kirscher and D. R. Phillips, Phys. Rev. C **84**, 054004 (2011).
59. ROY-STEINER EQUATIONS FOR  $\gamma\gamma \rightarrow \pi\pi$ , M. Hoferichter, D. R. Phillips and C. Schat, Eur. Phys. J. C **71**, 1743 (2011).
60. PRECISION CALCULATION OF THRESHOLD  $\pi^-d$  SCATTERING,  $\pi$ N SCATTERING LENGTHS, AND THE GMO SUM RULE, V. Baru, C. Hanhart, M. Hoferichter, B. Kubis, A. Nogga and D. R. Phillips, Nucl. Phys. A **872**, 69 (2011).
61. THE THREE-BOSON SYSTEM AT NEXT-TO-LEADING ORDER IN AN EFFECTIVE FIELD THEORY FOR SYSTEMS WITH A LARGE SCATTERING LENGTH, C. Ji, D. R. Phillips and L. Platter, Annals Phys. **327**, 1803 (2012).
62. THE MULTIPLE-SCATTERING SERIES IN PION-DEUTERON SCATTERING AND THE NUCLEON-NUCLEON POTENTIAL: PERSPECTIVES FROM EFFECTIVE FIELD THEORY, V. Baru, E. Epelbaum, C. Hanhart, M. Hoferichter, A. E. Kudryavtsev and D. R. Phillips, Eur. Phys. J. A **48**, 69 (2012).

63. USING EFFECTIVE FIELD THEORY TO ANALYSE LOW-ENERGY COMPTON SCATTERING DATA FROM PROTONS AND LIGHT NUCLEI, H. W. Griebhammer, J. A. McGovern, D. R. Phillips and G. Feldman, Prog. Part. Nucl. Phys. **67**, 841 (2012).
64. WHAT DIFFERENT VARIANTS OF CHIRAL EFT PREDICT FOR THE PROTON COMPTON DIFFERENTIAL CROSS SECTION—AND WHY, V. Lensky, J. A. McGovern, D. R. Phillips and V. Pascalutsa, Phys. Rev. C **86**, 048201 (2012).
65. THE MAGNETIC FORM FACTOR OF THE DEUTERON IN CHIRAL EFFECTIVE FIELD THEORY, S. Kolling, E. Epelbaum and D. R. Phillips, Phys. Rev. C **86**, 047001 (2012).
66. EFFECTIVE FIELD THEORY OF THREE-BOSON SYSTEMS AT NEXT-TO-NEXT-TO-LEADING ORDER, C. Ji and D. R. Phillips, Few Body Syst. **54**, 2317 (2013).
67. COMPTON SCATTERING FROM THE PROTON IN AN EFFECTIVE FIELD THEORY WITH EXPLICIT DELTA DEGREES OF FREEDOM, J. A. McGovern, D. R. Phillips and H. W. Griebhammer, Eur. Phys. J. A **49**, 12 (2013).
68. THREE-NUCLEON FORCES IN THE  $1/N_C$  EXPANSION, D. R. Phillips and C. Schat, Phys. Rev. C **88**, 034002 (2013).
69. THE LONGITUDINAL RESPONSE FUNCTION OF THE DEUTERON IN CHIRAL EFFECTIVE FIELD THEORY, C.-J. Yang and D. R. Phillips, Eur. Phys. J. A **49**, 122 (2013).
70. CARBON-19 IN HALO EFT: EFFECTIVE-RANGE PARAMETERS FROM COULOMB-DISSOCIATION EXPERIMENTS, B. Acharya and D. R. Phillips, Nucl. Phys. A **913**, 103 (2013).
71. IMPLICATIONS OF A MATTER-RADIUS MEASUREMENT FOR THE STRUCTURE OF CARBON-22, B. Acharya, C. Ji and D. R. Phillips, Phys. Lett. B **723**, 196 (2013).
72. MARRYING AB INITIO CALCULATIONS AND HALO EFT: THE CASE OF  ${}^7\text{Li} + n \rightarrow {}^8\text{Li} + \gamma$ , X. Zhang, K. M. Nollett and D. R. Phillips, Phys. Rev. C **89**, 024613 (2014).
73. COMBINING AB INITIO CALCULATIONS AND LOW-ENERGY EFFECTIVE FIELD THEORY FOR HALO NUCLEAR SYSTEMS: THE CASE OF  ${}^7\text{Be} + p \rightarrow {}^8\text{B} + \gamma$ , X. Zhang, K. M. Nollett and D. R. Phillips, Phys. Rev. C **89**, 051602 (2014).
74.  ${}^6\text{He}$  NUCLEUS IN HALO EFFECTIVE FIELD THEORY, C. Ji, C. Elster and D. R. Phillips, Phys. Rev. C **90**, 044004 (2014).

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83. BAYESIAN PARAMETER ESTIMATION FOR EFFECTIVE FIELD THEORIES, S. Wesolowski, N. Klco, R. J. Furnstahl, D. R. Phillips and A. Thapaliya, J. Phys. G **43**, no. 7, 074001 (2016).
84. ELECTROMAGNETIC STRUCTURE OF TWO- AND THREE-NUCLEON SYSTEMS: AN EFFECTIVE FIELD THEORY DESCRIPTION, D. R. Phillips, Ann. Rev. Nucl. Part. Sci. **66**, 421 (2016).
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3. REGULARIZATION AND RENORMALIZATION IN EFFECTIVE FIELD THEORIES OF THE NUCLEON-NUCLEON INTERACTION, D. R. Phillips, S. R. Beane, and T. D. Cohen, Nucl. Phys. **A631** (1998), 447c-451c.
4. REGULARIZATION AND THE POTENTIAL OF EFFECTIVE FIELD THEORY IN NN SCATTERING, D. R. Phillips, in “Nuclear Physics with Effective Field Theory”, Editors M. Savage, R. Seki, and U. van Kolck (World Scientific, Singapore, 1999), pp. 103–19,
5. ELECTRON-DEUTERON SCATTERING IN A RELATIVISTIC THEORY OF HADRONS, D. R. Phillips, in “Workshop on Electron-Nucleus Scattering, Elba International Physics Centre, Marciana Marina, Isola d’Elba. 1998”, Editors O. Benhar, A. Fabrocini, and R. Schiavilla.
6. ELECTRON-DEUTERON SCATTERING IN A RELATIVISTIC THREE-DIMENSIONAL FRAMEWORK, D. R. Phillips, in “Few-Body Problems in Physics '99: Proceedings of the 1st Asia-Pacific Conference, Tokyo, Japan, 1998”, Editors S. Oryu, M. Kamimura, and S. Ishikawa.
7. PROBING THE EFFECTIVENESS: CHIRAL PERTURBATION THEORY CALCULATIONS OF LOW-ENERGY REACTIONS ON THE DEUTERON, D. R. Phillips, Nucl. Phys. **A680**, 293–298 (2001).
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10. M. POINCARÉ VISITS JEFFERSON LAB: RELATIVISTIC MODELS OF FEW-NUCLEON SYSTEMS, D. R. Phillips, Nucl. Phys., **A737**, 52–60 (2004).



11. CHIRAL EFFECTIVE FIELD THEORY OF THE  $\Delta(1232)$  IN COMPTON SCATTERING, V. Pascalutsa and D. R. Phillips, Nucl. Phys. **A737**, S67–S69 (2004).
12. CHIRAL DYNAMICS IN THE DELTA(1232) REGION, V. Pascalutsa and D. R. Phillips, in proceedings of the “Fourth International Workshop on Chiral Dynamics in Theory and Experiment”, Bonn, Germany, 2003
13. EFFECTIVE FIELD THEORIES FOR NUCLEAR PHYSICS: A BRIEF, BIASED, BIBLIOGRAPHIC ESSAY, to appear in the proceedings of the 2003 Hampton University Graduate Studies held at Jefferson Lab (to be published by World Scientific).
14. COMPTON SCATTERING ON HE-3, D. Choudhury, D. R. Phillips, A. Nogga, in proceedings of the “Fifth International Workshop on Chiral Dynamics in Theory and Experiment”, Chapel Hill, 2006.
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16. PRECISION EXTRACTION OF  $a_{nn}$  FROM  $\pi^- D \rightarrow NN \gamma$  USING CHIRAL PERTURBATION THEORY, A. Gårdestig, D. R. Phillips, in proceedings of the 11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2007), Jülich, Germany, 2007, p. 139.
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19. A BAYESIAN APPROACH TO CHIRAL EXTRAPOLATIONS, M. R. Schindler and D. R. Phillips, in proceedings of the “6th International Workshop on Chiral Dynamics in Theory and Experiment”, Bern, 2009, PoS **CD09**, 019 (2009).
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22. ELECTROMAGNETIC PROPERTIES OF THE BE-11 NUCLEUS IN HALO EFT, in proceedings of the 19th International Conference on Few-body Problems in Physics, Bonn, Germany, 2009, D. R. Phillips and H. W. Hammer, EPJ Web Conf. **3**, 06002 (2010).
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25. ELECTROWEAK REACTIONS ON LIGHT NUCLEI IN CHIRAL PERTURBATION THEORY, D. R. Phillips, in proceedings of the 8th Latin American Symposium On Nuclear Physics And Applications, Santiago, Chile, 2009, AIP Conf. Proc. **1265**, 193 (2010).
26. THE NUCLEON-NUCLEON SYSTEM IN CHIRAL EFFECTIVE THEORY, in proceedings of the 12th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2010), Newport News, VA, 2010, AIP Conf. Proc. **1374**, 317 (2011).
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32. ISOSPIN BREAKING IN PION-DEUTERON SCATTERING AND THE PION-NUCLEON SCATTERING LENGTHS, M. Hoferichter, V. Baru, C. Hanhart, B. Kubis, A. Nogga and D. R. Phillips, in proceedings of the “7th International Workshop on Chiral Dynamics in Theory and Experiment”, Newport News, 2012, PoS CD **12**, 093 (2013).
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36. ONE- AND TWO-NEUTRON HALOS IN EFFECTIVE FIELD THEORY, D. R. Phillips, in proceedings of “22nd European Conference on Few-body Physics”, Krakow, Poland, 2013, Few Body Syst. **55**, 931 (2014).
37. DESCRIBING ONE- AND TWO-NEUTRON HALOS IN EFFECTIVE FIELD THEORY, D. R. Phillips, in proceedings of International Symposium on Nuclear Physics, Mumbai, India, 2013, Pramana **83**, 661 (2014).
38. COMPTON SCATTERING AND NUCLEON POLARISABILITIES IN CHIRAL EFT: STATUS AND FUTURE, H. W. Griebhammer, J. A. McGovern and D. R. Phillips, AIP Conf. Proc. **1735**, 040010 (2016).
39. COMPTON SCATTERING AND NUCLEON POLARISABILITIES IN CHIRAL EFT: THE NEXT STEPS, H. W. Griebhammer, J. A. McGovern and D. R. Phillips, PoS CD **15**, 036 (2016).
40. NEW RESULTS FOR COMPTON SCATTERING ON DEUTERIUM: A BETTER DETERMINATION OF THE NEUTRON ELECTROMAGNETIC POLARIZABILITIES, G. Feldman *et al.*, PoS CD **15**, 074 (2016).

41. PROCEEDINGS, 21ST INTERNATIONAL CONFERENCE ON FEW-BODY PROBLEMS IN PHYSICS (FB21) : CHICAGO, IL, USA, MAY 18-22, 2015, C. Elster, D. R. Phillips and C. D. Roberts, editors, EPJ Web Conf. **113** (2016).
42. HALO EFFECTIVE FIELD THEORY OF  ${}^6\text{He}$ , A. Thapaliya, C. Ji, D. R. Phillips, EPJ Web Conf. **113**, 08018 (2016).
43. HOW WELL DO WE UNDERSTAND  ${}^7\text{Be} + p \rightarrow {}^8\text{B} + \gamma$ ? AN EFFECTIVE FIELD THEORY PERSPECTIVE, X. Zhang, K. Nollett, D. R. Phillips, EPJ Web Conf. **113**, 06001 (2016).
44. PROPERTIES OF LITHIUM-11 AND CARBON-22 AT LEADING ORDER IN HALO EFFECTIVE FIELD THEORY, B. Acharya and D. R. Phillips, EPJ Web Conf. **113**, 06013 (2016).
45. NEWS ON COMPTON SCATTERING  $\gamma X \rightarrow \gamma X$  IN CHIRAL EFT, H. W. Griebhammer, J. A. McGovern and D. R. Phillips. EPJ Web Conf. **113**, 04006 (2016).

## Colloquia

“The  $NN - \pi NN$  system: on the borderline of nuclear and particle physics”  
Flinders University (1994).

“The Bethe-Salpeter equation in  $\phi^2\sigma$  field theory”, Flinders University (1995).

“Relativistic bound-state equations in three dimensions”, Flinders University (1996).

“Effective field theory for the nucleon-nucleon interaction?”, University of Regina (1997), University of New Mexico (1997).

“What’s going on in there? Electron scattering from the deuteron and the role of relativity”, Ohio University (1999).

“Nuclear Impressionism”, University of Iowa (2001), College of William and Mary (2003), Ohio University (2003), St. Mary’s University (2005), University of South Carolina (2005).

“Strong QCD and the Search for a Fundamental Understanding of Matter”, Chubu University (2006).

“The same but different: what the neutron can teach us about strong interactions”, University of Kentucky (2007), Ohio University (2008), Stellenbosch University (2008).

“Universality and halo nuclei”, University of South Carolina (2015), George Washington University (2015).

“Knowing What We Don’t Know: Nuclear Reactions, Effective Field Theory, and Uncertainty Quantification”, Texas A&M University, Commerce (2017).

**Seminars (only talks given since 2005 listed):**

Revealing the chiral structure of nucleons and light nuclei using electroweak probes

Thomas Jefferson National Accelerator facility (2005)  
 Research Center for Nuclear Physics, Osaka (2006)  
 Tokyo Institute of Technology (2006)  
 Osaka University (2006)  
 California Institute of Technology (2008)  
 Carnegie Mellon University (2008)  
 University of Glasgow (2008)  
 University of Manchester, Manchester, U. K. (2008)  
 Hebrew University of Jerusalem, Jerusalem, Israel (2008)  
 Technical University of Darmstadt, Germany (2009)  
 Argonne National Laboratory (2010)

Using chiral perturbation theory to extract the neutron-neutron scattering length from  $\pi^- d \rightarrow nn\gamma$

Asia-Pacific Center for Theoretical Physics, Seoul (2006)  
 Argonne National Laboratory (2006)

The role of the Delta (1232) in nuclear effective theory

Ohio State University (2006)  
 Duke University (2006)

Electron-deuteron scattering in chiral effective theory

Bates Linear Accelerator (2005)  
 University of Bonn (2006)  
 Ohio State University (2007)  
 University of Kentucky (2007)

Bayesian methods for parameter estimation in effective field theories

University of Adelaide (2008)  
 University of Washington (2009)

New light on nucleon structure from chiral effective field theory

University of Bonn, Germany (2009)  
 University of Mainz, Germany (2009)  
 Technical University of Munich, Germany (2009)

Revealing the chiral structure of nucleons and light nuclei using electroweak probes

Argonne National Laboratory (2010)  
 Kent State University (2012)

Addressing topics in nuclear structure in EFTs without explicit pions

University of Maryland (2011)  
 Michigan State University (2011)  
 Ohio State University (2012)

Using effective field theory to analyze low-energy Compton scattering data

University of Mainz (2013)

Recent results in chiral effective field theory for the NN system

University of Adelaide (2013)

Describing one- and two-neutron halos in effective field theory

Technical University, Darmstadt (2014)

Bayesian Uncertainty Quantification: Errors in Your EFT

University of Cincinnati (2016)

 ${}^7\text{Be} + p \rightarrow {}^8\text{B} + \gamma$ : how EFT and Bayesian methods improve a reaction calculation

Michigan State University (2017)  
 Lawrence Livermore National Laboratory (2017)

**Invited talks at workshops and conferences**

- “Regularization and the potential of effective field theory in NN scattering”, at Workshop on Effective Field Theories in Nuclear Physics, Caltech, February 1998
- “Electron-deuteron scattering in a current-conserving relativistic theory of hadrons”, at Workshop on Electron-Nucleus Scattering, Elba International Physics Centre, Marciana Marina, Isola d’Elba, July 1998
- “Probing the effectiveness: effective field theory calculations of low-energy reactions on light nuclei”, APS Centennial Meeting, Atlanta, March 1999.
- “An equal-time approach to the theory of relativistic few-hadron systems”, Symposium on current topics in the field of light nuclei, Cracow, Poland, June 1999.
- “How effective are NN potential models?”, ECT\* workshop on “The Nuclear Interaction: Modern Developments”, Trento, Italy, July 1999.
- “Electron-deuteron scattering in a three-dimensional relativistic framework”, First Asia-Pacific Conference on Few-Body Problems in Physics, Noda-Kashiwa, Japan, August 1999.

- “Probing the effectiveness: chiral perturbation theory calculations of low-energy reactions on the deuteron”, International Conference on Quark Nuclear Physics, Adelaide, February 2000.
- “Extra dimensions, SN1987a, and nucleon-nucleon scattering data”, Workshop on Effective Theories and Effective Interactions, Seattle, July 2000.
- “Good news, bad news: recent results from relativistic calculations of elastic electron scattering on deuterium”, Gordon Research Conference on Photonuclear Reactions, Tilton, NH, August 2000.
- “Effective field theory, bare interactions, and bare currents”, Town Meeting on Nuclear Structure and Nuclear Astrophysics, Oakland, CA, November 2000.
- “Electron-deuteron scattering in a relativistic theory of hadrons”, Workshop on Relativity in Hadronic Systems, Trento, Italy, November 2000.
- “Accurate calculations of electromagnetic reactions on deuterium”, Workshop on recent progress in the  $NN$  system, Institute for Nuclear Theory, Seattle, June 2001.
- “Probing the effectiveness: chiral perturbation theory calculations of low-energy reactions on deuterium”, Conference on Mesons and Light Nuclei, Prague, Czech Republic, July 2001.
- “Building light nuclei from neutrons, protons, and pions”, Lectures at Summer School on Hadronic Physics, Prague, Czech Republic, July 2001.
- “A renormalized equation for the three-body system with short-range interactions”, Workshop “Pushing the Limits of QCD”, Benasque, Spain, July 2002.
- “Compton scattering on deuterium in chiral perturbation theory”, Manchester, U.K., July 2002.
- “The three-nucleon system in effective field theory”, Workshop on Effective Theories of Strongly-Interacting Matter, Manchester, U.K., July 2002.
- “Effective field theory for nuclear physics”, Lectures at Jorge Andre Swieca School on Nuclear Physics, Sao Paulo, Brazil, February 2003.
- “M. Poincaré visits Jefferson Lab: Relativistic Models of few-nucleon systems”, International Conference on Few-body Problems in Physics, Durham, June 2003.
- “Effective field theory for nuclear physics”, Summer School Lectures for “Hampton University Graduate Studies at Jefferson Lab”, June 2003.
- “Probing the effectiveness: chiral perturbation theory calculations of low-energy reactions on deuterium”, Workshop on Chiral Dynamics of Hadrons and Hadrons in a Medium, Valencia, Spain, June 2003.

- “Probing the effectiveness: chiral perturbation theory calculations of low-energy reactions on deuterium”, Nuclear Physics Gordon Conference, Waterville, ME, July 2003.
- “Deuteron form factors: what have we learned?”, Hall C Summer Workshop, Jefferson Lab, September 2003.
- “Compton scattering from the proton, deuteron, and neutron”, Workshop on the NN/NNN system, Institute for Nuclear Theory, Seattle, October 2003.
- “Chiral perturbation theory for electroweak reactions on deuterium”, Meeting of the Division of Nuclear Physics of the APS, Tucson, October 2003.
- “Effective field theory methods”, National Nuclear Physics Summer School, Bar Harbor, ME, June 2004.
- “Chiral perturbation theory for electroweak reactions on deuterium”, INT Workshop on Nuclear Forces and the Quantum Many-body Problem, Seattle, October 2004.
- “Nucleon polarizabilities from Compton scattering on deuterium: an opportunity for MAXlab”, MAXlab Program Advisory Committee meeting, Lund, Sweden, December 2004.
- “Using chiral perturbation theory to extract the neutron-neutron scattering length from  $\pi^-d \rightarrow nn\gamma$ ”, ECT\* workshop on Charge Symmetry Breaking and Other Isospin Violation, Trento, Italy, June 2005.
- “The role of the Delta isobar in nuclear EFT”, ECT\* workshop on QCD and Nuclear Forces, Trento, Italy, June 2005.
- “Compton scattering from deuterium”, HIGS workshop on Compton Scattering and Few-body Nuclear Physics, Chapel Hill, September 2006.
- With D. Choudhury and A. Nogga, “Investigating Neutron Polarizabilities using Compton Scattering from Helium-3” 5th International Workshop on Chiral Dynamics, Chapel Hill, NC, September 2006.
- “Few-nucleon physics: Working Group Summary” 5th International Workshop on Chiral Dynamics, Chapel Hill, NC, September 2006.
- With A. Gårdestig, “Using low-energy weak reactions to constrain three-nucleon forces and the neutron-neutron scattering length”, 380th W. E. Heraeus Seminar, “QCD and Few-Hadron Systems”, Bad Honnef, Germany, November 2006.
- “Chiral dynamics of nucleons, pions, and Deltas”, Town Meeting on “QCD and Hadron Structure”, Rutgers, NJ, January 2007.



- “Relating the three-nucleon force to other processes using chiral effective field theory”, TRIUMF Workshop on Three-nucleon Forces, Vancouver, Canada, March 2007.
- “Compton scattering on the proton and deuteron”, INT Program on Neutron Physics, Seattle, March 2007.
- “Electromagnetic reactions on light nuclei in chiral effective theory”, JLab Users Group Meeting, Newport News, VA, June 2007.
- “Electromagnetic reactions on light nuclei in chiral effective theory”, Gordon Research Conference on Nuclear Physics, Newport, RI, July 2007.
- “Electromagnetic reactions on light nuclei in chiral effective theory”, 11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2007), Jülich, Germany, September 2007.
- With A. Gårdestig, “Precision extraction of  $a_{nn}$  from  $\pi^-d \rightarrow nn\gamma$  using chiral perturbation theory”, 11th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2007), Jülich, Germany, September 2007.
- With D. Shukla, “Compton scattering from Helium-3 in chiral effective theory”, Workshop on “Soft Photons and Light Nuclei”, Institute for Nuclear Theory, Seattle, WA, June 2008.
- “Chiral effective theory for electromagnetic reactions on light nuclei”, Summer School Lectures at the 25th Students’ Workshop on Electromagnetic Reactions, Bosen (Saar), Germany, September 2008.
- “Summary of session on the EFT with short-range interactions alone”, ECT\* Workshop on “Bound States and Resonances in Effective Field Theories”, ECT\*, Trento, Italy.
- “Electromagnetic reactions in few-nucleon systems”, 6th International Workshop on Chiral Dynamics, Theory and Experiment, Bern, Switzerland, July 2009.
- “Some EFTish thoughts on baryon resonance analysis”, Workshop on resonance parameter extraction, Jefferson Lab., July 2009.
- “The irreducible contribution”, at the Symposium “Three-body dynamics in hadron structure and hadronic systems” in honor of Iraj Afnan’s 70th birthday, Jefferson Lab., July 2009.
- “Universality and beyond”, at 19th International Conference on Few-body Problems in Physics, Bonn, Germany, August 2009.
- “Electroweak reactions on light nuclei in chiral perturbation theory”, 8th Latin American Symposium On Nuclear Physics And Applications, Santiago, Chile, December 2009.

- With V. Baru *et al.*, “A high-accuracy determination of the isoscalar  $\pi N$  scattering length from pionic deuterium”, Achievements and New Directions in Subatomic Physics: Workshop in Honour of Tony Thomas’ 60th Birthday, Adelaide, Australia, February 2010.
- “The nucleon-nucleon system in chiral effective theory”, 12th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2010), Newport News, VA, May 2010.
- “Effective field theory for light nuclei”, Five lectures at the University of Barcelona, Spain, June 2010.
- “Connecting nuclear physics to quantum chromodynamics”, 5th meeting of the Saudi Physical Society, Abha, Saudi Arabia, October 2010.
- “Electromagnetic reactions in chiral effective field theory”, Argonne Theory Institute, Argonne National Laboratory, August 2012.
- “Recent results in chiral effective field theory for the two-nucleon system”, Seventh International Workshop on Chiral Dynamics: Theory and Experiment, Jefferson Lab, August 2012.
- “An introduction to chiral effective field theory for the two-nucleon system”, ESNT workshop on nuclear forces in effective field theory, ESTN, Institut de Physique Nucleaire, Orsay, France, March 2013.
- with C. Ji and L. Platter, “Beyond universality: using EFT to quantify range corrections in few-atom systems”, Workshop on Finite temperature and low energy effects in cold atomic and molecular few - and many-body systems, ITAMP, Harvard, Cambridge, MA, March 2013.
- “Using EFT to describe photon interactions with nuclei”, Workshop on Nuclear Dynamics in Effective Field Theory, Ruhr University, Bochum, Bochum, Germany, July 2013.
- “I’d rather be lucky than good: electron-deuteron scattering in  $\chi$ EFT”, INT program on theory needs of next generation experiments, Institute for Nuclear Theory, Seattle, August 2013.
- “One- and two-neutron halos in effective field theory”, International Symposium on Nuclear Physics, Bhabha Atomic Research Center, Mumbai, India, December 2013.
- “One- and two-neutron halo nuclei in effective field theory”, EMMI workshop on threshold physics at the neutron drip line, Extreme Matter Institute, GSI, Darmstadt, Germany, February 2014.
- “One- and two-neutron halo nuclei in effective field theory”, Asia-Pacific Conference on Few-body Problems in Physics, Handorf, South Australia, April 2014.

- “The three-nucleon force in the  $1/N_c$  expansion”, Workshop on Bound States and Resonances in EFTs, Benasque Center for Science, Benasque, Spain, July 2014.
- “Manifestations of chiral dynamics in hadrons and nuclei”, Cold QCD Town Meeting, Philadelphia, September 2014.
- “Universality and halo nuclei”, DPG Spring Meeting, Heidelberg, Germany, March 2015.
- “Topics in Halo EFT”, EMMI Rapid Reaction Task Force on Coulomb Effects in Few-Nucleon Systems, Extreme Matter Institute, GSI Research Center, Darmstadt, Germany, May 2016.
- “Estimating and checking truncation errors in effective field theory”, Program on Bayesian Methods in Nuclear Physics, Institute for Nuclear Theory, University of Washington, Seattle, July 2016.
- “Describing two-neutron halos using effective field theory”, Workshop on Three-body Systems in Reactions with Rare Isotopes, European Center for Theoretical Studies in Nuclear Physics, Trento, Italy, October 2016.
- “Do halo nuclei exhibit universality?”, Program on Universality in few-body systems, Kavli Institute for Theoretical Physics, University of California, Santa Barbara, November 2016.
- “Beyond universality? P-wave interactions in halo nuclei”, Program on Universality in few-body systems, Kavli Institute for Theoretical Physics, University of California, Santa Barbara, December 2016.
- “ ${}^7\text{Be} + p \rightarrow {}^8\text{B} + \gamma$ : how EFT and Bayesian methods can improve a reaction calculation”, Program on Toward Predictive Theories of Nuclear Reactions Across the Isotopic Chart, Institute for Nuclear Theory, University of Washington, Seattle, March 2017.

### Contributed talks at workshops and conferences

- “Covariant equations for the  $NN - \pi NN$  system”, at 14th Int’l. Conf. on Few-Body Problems in Physics, Williamsburg, VA, May 1994
- “Relativistic bound-state equations in three dimensions”, at 14th Int’l. Conf. on Particles and Nuclei, Williamsburg, VA, May 1996
- “How short is too short? Short-range interactions in effective field theory treatments of nucleon-nucleon scattering”, at APS April Meeting, Washington, DC, April 1997
- “Low-energy spin-orbit interaction of composite spin-half systems with scalar and vector fields”, at APS April Meeting, Washington, DC, April 1997

- “A gauge invariant three-dimensional description of relativistic bound-states”, at Workshop on Relativity in Few-Body Systems, Groningen, The Netherlands, July 1997
- “Regularization and renormalization in effective field theories of the nucleon-nucleon interaction”, at 15th Int’l. Conf. on Few-Body Problems in Physics, Groningen, The Netherlands, July 1997
- “Extra dimensions, SN1987a, and nucleon-nucleon scattering data”, Mid-west Nuclear Theory Get-together, Argonne National Laboratory, September 2000.
- With Y. Pidopryhora: “Low-energy theory for spinless ‘neutron-proton’ bremsstrahlung: work in progress”, Ohio Section Meeting of the APS, Columbus, October 2002.
- With D. Choudhury and E. Mortenson, “Constraining the short-range  $NN$  force using the Nijmegen PWA93  $^1S_0$  phase shift solution”, Ohio Section Meeting of the APS, Columbus, October 2002.
- With V. Pascalutsa, “Compton Scattering on the proton in chiral perturbation theory with explicit  $\Delta$  degrees of freedom”, Mid-West Nuclear Theory Get-together, Argonne National Laboratory, October 2002.
- “Compton Scattering on the proton in chiral perturbation theory with explicit  $\Delta$  degrees of freedom”, APS April Meeting, Philadelphia, April 2003.
- With D. Choudhury, “Compton scattering on the deuteron in chiral perturbation theory”, Ohio Section of the APS meeting, Athens, April 2004.
- With A. Gårdestig, “The neutron-neutron scattering length extracted from  $\pi^-d \rightarrow nn\gamma$ ”, Fall meeting of the Division of Nuclear Physics of the APS, Chicago, October 2004.
- “Compton scattering on the proton and deuteron using chiral effective theory”, Fall meeting of the Division of Nuclear Physics of the APS, Maui, September 2005.
- With D. Choudhury, “Compton scattering on the proton and deuteron using chiral effective theory”, Fall meeting of the Division of Nuclear Physics of the APS, Maui, September 2005.
- With D. Choudhury, “Compton scattering on the proton and deuteron using chiral effective theory”, Midwest Nuclear Theory Get-together, Argonne National Laboratory, October 2005.
- With C.-J. Yang and C. Elster, “Subtractive renormalization of the  $NN$  scattering amplitude at leading order in chiral effective theory”, Midwest Nuclear Theory Get-together, Argonne National Laboratory, October 2007.
- With M. R. Schindler, “Bayesian parameter estimation in effective field theories”, Annual Meeting of the Division of Nuclear Physics, Oakland, CA, October 2008.

- With C. Ji, “Range Corrections to Three-Body Bound States in Coordinate Space”, 21st Annual Midwest Nuclear Theory Get-Together, Argonne, IL, October 2008.
- With M. R. Schindler, “Bayesian parameter estimation in effective field theories”, 21st Annual Midwest Nuclear Theory Get-Together, Argonne, IL, October 2008.
- With C.-J. Yang and C. Elster, “Subtractive Renormalization of the chiral potentials up to next-to-next-to-leading order I: Higher NN partial waves.”, American Physical Society meeting, May 2009.
- With C.-J. Yang and C. Elster, “Subtractive Renormalization of the chiral potentials up to next-to-next-to-leading order II: S-waves.”, American Physical Society meeting, May 2009.
- With M. R. Schindler, “A Bayesian approach to chiral extrapolations”, 6th International Workshop on Chiral Dynamics, Bern, Switzerland, July 2009.
- With C.-J. Yang and C. Elster, “Subtractive renormalization for chiral potentials in the NN system”, 6th International Workshop on Chiral Dynamics, Theory and Experiment, Bern, Switzerland, July 2009.
- With H.-W. Hammer, “Electromagnetic properties of the Beryllium-11 nucleus in Halo EFT”, 19th International Conference on Few-body Problems in Physics, Bonn, Germany, August 2009.
- “A precision description of deuteron electromagnetic form factors at low  $Q^2$ ”, April meeting of the American Physical Society, Washington, DC, February 2010.
- With H.-W. Hammer, “Electromagnetic properties of the Beryllium-11 nucleus in Halo EFT”, Fall meeting of the Ohio Section of the American Physical Society, Marietta, OH, October 2010.
- “One- and two-neutron halos in effective field theory”, 22nd European Few-body Conference, Krakow, Poland, September 2013.
- With B. Acharya, P. Hagen, and H.-W. Hammer, “Coulomb dissociation of two-neutron halos”, April APS meeting, Baltimore, MD, April 2015.
- “Quantifying truncation errors in effective field theory”, Eighth International Workshop on Chiral Dynamics: Theory and Experiment, Pisa, Italy, August 2015.

## STUDENT ADVISING

- K. A. Scaldeferri (Summer Scholar in Maryland Physics Department, 1996)
- W. D. Linch (Summer Scholar in Maryland Physics Department, 1997)
- M. P. Dorsten (REU student, University of Washington, Summer 1999)
- E. Mortenson (M. S. student, Ohio University, Fall 2001–Spring 2002).  
Mr. Mortenson completed a Masters project “NN scattering in the  $^1S_0$  channel in June 2002.
- Y. Pidopryhora (M. S. student, Ohio University, Fall 2001–Spring 2003).  
Mr. Pidopryhora completed a Masters thesis “Testing the Low energy theorem for spinless ‘neutron-proton’ bremsstrahlung” in March 2003.
- D. Choudhury (Ph. D. student, Ohio University, Fall 2002–Fall 2006)  
Dr. Choudhury completed her Ph. D. dissertation “Investigating Neutron Polarizabilities and  $NN$  Scattering in Heavy-Baryon Chiral Perturbation Theory” in November 2006.  
She received the 2008 APS “Dissertation Award in Nuclear Physics”.
- H. Shoniyozov (M. S. student, Ohio University, Fall 2004–Summer 2005)  
Mr. Shoniyozov completed a Masters project “Dressing the  $\Delta$  in chiral effective theory” in August 2005.
- K. Murphy (M. S. student, Ohio University, Summer 2007–Fall 2008)  
Mr. Murphy completed his M. S. thesis “Electromagnetic form factors of light nuclei” in November 2008.
- C.-J. Yang (Ph. D. student, Ohio University, Winter 2006–Summer 2010)  
Dr. Yang completed a Ph. D. dissertation “Subtractive Renormalization of the NN Interaction in Chiral Effective Theory and the Deuteron Electrodisintegration Calculation” in August 2010.
- C. Ji (Ph. D. student, Ohio University, Summer 2007–Summer 2012)  
Dr. Ji completed a Ph. D. dissertation “Universality and Beyond: Universality in Three-body Physics in Cold Atoms and Halo Nuclei” in August 2012.
- B. Acharya (Ph. D. student, Ohio University, Summer 2010–Spring 2015)  
Dr. Acharya completed a Ph. D. dissertation “Properties of one- and two-nucleon halos in effective field theory” in January 2015.
- N. Klco (HTC student, Ohio University, Fall 2013–Spring 2015)  
Ms. Klco completed her HTC thesis “Bayesian errors and rogue effective field theories” in April 2015.  
She received an HTC thesis award for this work.
- A. Thapaliya (Ph. D. student, Ohio University, Winter 2012–Summer 2016)  
Dr. Thapaliya completed a Ph. D. dissertation “Topics in effective field theories for the strong interaction” in August 2016.