

VITA
KIMBALL ALAN MILTON

CURRENT POSITION

George Lynn Cross Research Professor, Emeritus, Homer L. Dodge Department 2017–
of Physics and Astronomy, University of Oklahoma, Norman

EMPLOYMENT RECORD

George Lynn Cross Research Professor, Homer L. Dodge Department 2007–2016
of Physics and Astronomy, University of Oklahoma, Norman

Simons Fellow, Laboratoire Kastler Brossel, Université Pierre et Marie Curie 2013–4
Paris, France

Professor, Homer L. Dodge Department of Physics and Astronomy, 1986–2007
University of Oklahoma, Norman

E. T. Jaynes Visiting Professor, Department of Physics 2005–6
Washington University, St. Louis

Senior Visiting Fellow, Department of Physics, Imperial College, London 1995

Visiting Professor, Department of Physics, 1989
Ohio State University, Columbus

Professor, Department of Physics, 1984–1986
Oklahoma State University, Stillwater

Visiting Professor, Department of Physics 1985–1986
and Astronomy, University of Oklahoma, Norman

Adjunct Professor, Department of Physics 1984–1985
and Astronomy, University of Oklahoma, Norman

Associate Professor, Department of Physics, 1981–1984
Oklahoma State University, Stillwater

Adjunct Associate Professor/Associate 1979–1981
Research Physicist, Department of Physics,
University of California at Los Angeles
and

Visiting Associate Professor, Department of
Physics, Ohio State University, Columbus

Adjunct Assistant Professor/Assistant Research 1971–1979
Physicist, Department of Physics, University
of California at Los Angeles

Physicist, Lawrence Radiation Laboratory, Summer 1969
Livermore

Physicist, U.S. Naval Radiological Defense Summer 1967
Laboratory, San Francisco

EDUCATION

Ph.D., Harvard University 1971
Dissertation Title: *Unitarity and Vertex Functions*
Thesis Advisor: Julian Schwinger

A.M., Harvard University	1968
B.S., University of Washington, Seattle, Phi Beta Kappa, Magna cum laude	1967

COURSES TAUGHT

	Number of Times Taught
At UCLA (1972–1979)	
Physics 7A/8A: General Physics: Mechanics (for physical science majors)	4
Physics 10: Physics (for non-science majors)	3
Physics 131A and 131B: Mathematical Methods of Physics	3 + 3
Physics 115A: Quantum Mechanics	1
Physics 126: Elementary Particle Physics	1
Physics 199: Special Studies in Physics	3
Physics 596: Directed Individual Study	1
Experimental College: Living in the Nuclear Age	1
At Ohio State University (1979–1981)	
Physics 100.01: Vibrations and Waves (for nonscience majors)	3
Physics 100.02: Energy (for non-science majors)	1
Physics 626: Mechanics	1
Physics 627: Thermodynamics and Statistical Mechanics	1
At Oklahoma State University (1981–1985)	
Astronomy 1104: Elementary Astronomy	1
Physics 2014: General Physics (for physics and engineering students)	3
Physics 3313: Modern Physics	2
Physics 4413: Modern Physics II	1
Physics 5453: Methods of Theoretical Physics	1
Physics 5613: Quantum Mechanics I	3
Physics 6010: Quantum Field Theory (on Talk-Back TV, with students at the University of Oklahoma)	1 + 1
Physics 6000: Doctoral Research	6
At University of Oklahoma (1985–2016)	
Physics 3183: Electricity and Magnetism	1
Physics 3803: Introduction to Quantum Mechanics I	1
Physics 3223: Modern Physics for Engineers	1
Physics 3803: Introduction to Quantum Mechanics I	1
Physics 4153: Statistical Physics and Thermodynamics	1
Physics 4803: Introduction to Quantum Mechanics II	1
Physics 5153: Classical Mechanics	2
Physics 5163: Statistical Mechanics	7
Physics 5393: Quantum Mechanics I	3
Physics 5573: Electrodynamics I	10
Physics 5583: Electrodynamics II	7
Physics 6403: Quantum Mechanics II	2
Physics 6693/5013: Mathematical Methods of Physics I	10

Physics 5970/6840: Seminar in Particle Physics	5
Physics 6213: Advanced Particle Physics	1
Physics 6433: Quantum Field Theory	4
Physics 5970: Advanced Quantum Field Theory	1
Physics 5990: Special Studies	9
Physics 6980: Doctoral Research	45
Grad 5003/Univ 4000: OSLEP, Quantum Frontier	1
At Washington University in St. Louis (2006)	
Physics 506: Classical Electrodynamics II	1

FELLOWSHIPS AND GRANTS

PI, Advances in Casimir-Polder Interactions Between Atoms and Substrates, NSF	2020-25
PI, Summer School and Workshop on Casimir Effect, Trondheim, Norway, Julian Schwinger Foundation	2018
PI, Advances in Casimir-Polder Interactions Between Atoms and Substrates, NSF	2017-20
Casimir effect and van der Waals forces in multilayer systems, Norwegian Research Council, co-investigator	2016-19
Carl T. Bush Lecturer, Homer L. Dodge Dept. of Physics and Astronomy	2015-8
PI, Julian Schwinger Foundation, New Directions in Casimir Physics	2015
PI, Julian Schwinger Foundation, Support of Workshop on Casimir Physics, les Houches	2014
PI, Simons Foundation, Simons Fellowship for Sabbatical	2013-14
PI, Julian Schwinger Foundation, Applications of Quantum Vacuum Physics	2012-2014
APS International Travel Grant, for Aram Saharian	2011
Principal Investigator, Quantum Vacuum Energy, US NSF	2010-2013
Principal Investigator, Theory Task, Department of Energy Grant, OU	1987-2013
National Science Foundation, grant for QFEXT09	2009
Principal Convener, Quantum Field Theory Under the Influence of External Conditions (QFEXT09), ESF Grant	2009
Principal Investigator, Quantum Vacuum Energy, US NSF	2006-2010
E. T. Jaynes Visiting Professorship, Washington University, St. Louis	2005-2006
US DOE, EPSCoR, Oklahoma Center for High Energy Physics	2004-2011
Institute of Physics Publishing, grant for QFEXT03	2003
University of Chicago, travel grant for MGX	2003
National Science Foundation, grant for QFEXT03	2003
Co-PI, US Department of Energy, EPSCoR/Lab Partnership Award	2003-2006
Oak Ridge Associated Universities, grant for QFEXT03	2002
OU Research Council Award (for workstation)	2000
College of Arts and Sciences, Instructional Computing Grant	2000
Principal Investigator, NSF Cooperative Research Grant	1996-2000
Special funding from OU for International Collaboration	1999-2000
Special funding from OU for International Collaboration	1997-1998

OU College of Arts and Sciences Faculty Research Grant	1994–1995
UK PPARC Visiting Fellowship	1995
Pittsburgh Supercomputing Center, C90 grant	1993
OU Research Council Award (for workstation)	1991
NSF Grant for <i>Beyond the Standard Model II</i>	1990
Special Funding from Vice Provost for Research Administration	1988–1989
OU Associates Funding (for a postdoc)	1987–1988
Dean’s Starter Grant, Oklahoma State University	1984–1985
NSF grant for <i>Workshop on Non-Perturbative QCD</i>	1983
APS/NSF Travel Grant to attend 21st ICHEP, Paris	1982
Dean’s Starter Grant, Oklahoma State University	1982–1983
Co-Principal Investigator, Department of Energy Contract, OSU	1981–1986
Co-Recipient of Alfred P. Sloan Grant, J. Schwinger, P.I.	1975–1978
NSF Predoctoral Fellow	1967–1971
Honorary Woodrow Wilson Fellow	1967–1968
Crown Zellerbach Scholarship	1963–1967

OTHER HONORS

Fellow, American Physical Society	2014
Honorary White Buffalo Mask Award from OU School of Drama	2011
Foreign member, Royal Norwegian Society of Sciences and Letters Academy	2011
Fellow, The Institute of Physics (UK)	2004
Regents’ Award for Superior Research	1991
Associates Distinguished Lecturer	1988–1989
Selected for Inclusion in <i>Who’s Who in America</i> , <i>Who’s Who in the South and Southwest</i> , <i>Who’s Who in Science and Engineering</i> , and in <i>American Men and Women in Science</i>	

SEMINARS AND COLLOQUIA:

University of Alabama, University of Arkansas, Baylor University, Boston University, Brandeis University, University of British Columbia, Brookhaven National Laboratory, CALTECH, University of California, Riverside, Case Western Reserve University, Czech Technical University, Czech Nuclear Physics Institute (Rež), Dartmouth College, University of Durham, East China University of Science and Technology, Shanghai, École Normale Supérieure, FERMILAB, Cal State Fullerton, University of Illinois, Urban-Champaign, Imperial College, Iowa State University, UC Irvine, Joint Institute for Nuclear Research (Dubna), University of Kansas, Kansas State University, KEK, Kyoto University, Laboratoire Kastler Brossel, Los Alamos National Lab., MIT, UNAM, University of Minnesota, University of Mississippi, University of Missouri, University of Munich, State University of New York, Stony Brook, Niels Bohr Institute, University of North Carolina, North Texas State University, Norwegian University of Science and Technology, Ohio State University, Oklahoma State University, University of Oklahoma, University of Oregon, Osaka University, Oxford University, Simon Fraser University, Southampton University, Southern Illinois University-Carbondale, SLAC, University of Texas, Dallas, Texas Tech University, Tokyo University, University of Tübingen, University of Tulsa, UCLA, USC, University of Virginia, University of Wales, Swansea, Washington University, University of Washington,

Zhengzhou University.

VISITING SCIENTIST

Kyoto University, RIFP	June 1988
KEK	July 1985
Los Alamos National Laboratory	August 1983, June 1986
University of Munich	July 1982
FERMILAB	July 1981, July 1993

PARTICIPANT AT CONFERENCES AND SUMMER SCHOOLS

Frontiers in Quantum and Mesoscopic Thermodynamics (FQMT) (virtual speaker)	2024
CMD29 Mini-Colloquium on Advances in the Casimir Force and Heat Transfer Phenomena, Manchester, UK (virtual speaker)	2022
Quantum and Thermal Electrodynamical Fluctuations in the Presence of Matter: Progress and Challenges, KITP Santa Barbara	2022
Third International Conference on Symmetry (virtual)	2021
Frontiers in Quantum and Mesoscopic Thermodynamics (virtual)	2021
Unruh Acceleration Radiation, Vacuum Entanglement and Relativity, Princeton (virtual)	2020
Joint Conference of the CMD Division of EPS and RSEF, Madrid (virtual)	2020
The Second International Conference on Symmetry, Benasque	2019
Photonic and Electromagnetic Research Symposium, Rome	2019
American Physical Society, April Meeting, Denver	2019
SchwingerFest2018: $g - 2$, UCLA, Los Angeles	2018
Casimir Effect Workshop and Summer School, Trondheim, Norway	2018
Julian Schwinger Centennial Conference (Co-organizer), Singapore	2018
The First International Conference on Symmetry, Barcelona (Co-chair)	2017
Workshop on Casimir and van der Waals Forces, Trondheim	2017
Progress in Electromagnetics Research Symposium (PIERS), St. Petersburg, Russia	2017
Workshop on Cosmology and the Quantum Vacuum, Benasque, Spain	2016
Workshop on Casimir and van der Waals Physics: Progress and Prospects, Hong Kong	2016
BernardFest, Washington University, St. Louis	2016
Frontiers in Quantum and Mesoscopic Thermodynamics, Prague	2015
Cosmology and the Quantum Vacuum, Rhodes	2015
American Physical Society, March Meeting, San Antonio	2015
Progress in Electromagnetics Research Symposium (PIERS), Guangzhou, China	2014
Casimir Physics Workshop, École de Physique des Houches, Co-organizer with Astrid Lambrecht	2014
Quantum Vacuum and Gravitation, Université Toulouse Paul Sabatier	2013
Simons Foundation Meeting, Mathematics and Physical Sciences, New York City	2013
American Physical Society, March Meeting, Baltimore	2013
Pan-American Advanced Study Institute (PASI) on “Frontiers of Casimir Physics,” Ushuaia, Argentina	2012

Mathematical Structures in Quantum Systems, Benasque, Spain	2012
American Astronomical Society, Anchorage	2012
Casimir Physics School, Lorentz Center, Leiden	2012
Symposium on \mathcal{PT} Quantum Mechanics, Heidelberg	2011
Quantum Field Theory Under the Influence of External Conditions (QFEXT11), Benasque, Spain	2011
Frontiers in Quantum and Mesoscopic Thermodynamics, Prague	2011
Workshop on Observability and Theoretical Grounding of Thermal Casimir Forces Trondheim, Norway	2011
Workshop on Spontaneous Energy Focusing Phenomena and Multiscale Physics, Singapore	2010
Symposium on Pseudo-Hermitian Hamiltonians in Quantum Physics, Hangzhou	2010
Nonperturbative Quantum Field Theory, Norman	2010
Cosmology, the Quantum Vacuum, and Zeta Functions, Barcelona	2010
Joint Meeting of APS and AAPT, Washington	2010
Workshop on Casimir Force Control, Santa Fe	2009
9th Conference on Quantum Field Theory Under the Influence of External Conditions (QFEXT09), Norman, OK (Principal Organizer)	2009
Casimir Forces and Their Measurement, Satellite Workshop at 12th International Conference on Noncontact Atomic Force Microscopy, Yale	2009
3rd International Workshop on the Interconnection Between Particle Physics and Cosmology, Norman	2009
Royal Norwegian Society of Science and Letters Seminar in honor of Iver Brevik, NTNU, Trondheim	2009
Quantum Mechanics in the Complex Domain, Washington University (chief organizer)	2009
Annual AAAS/Winter AAPT Meeting, Chicago	2009
International Conference on High Energy Physics, Philadelphia	2008
60 Years of the Casimir Effect, Brasilia, Brazil	2008
International Seminar on Contemporary Problems of Elementary Particle Physics Dedicated to the Memory of Igor Solovtsov, JINR, Dubna, Russia	2008
Eighth Workshop on Quantum Field Theory Under the Influence of External Conditions, QFEXT07, Leipzig	2007
Sixth Workshop on Pseudo-Hermitian Hamiltonians in Quantum Physics, City University, London	2007
Thermal Radiation at the Nanoscale: Forces, Heat Transfer, and Coherence, Les Houches, France	2007
Midwest Theory Conference, Lawrence, KS	2007
Conference on Heat Kernels in Mathematics and Physics, Blaubeuren Marcel Grossmann 11, Berlin	2006
Seventh Workshop on Quantum Field Theory Under the Influence of External Conditions, QFEXT05, Barcelona	2005
Supersymmetry, Gauge Theories, and Quantum Gravity, 60th Anniversary of L. F. Urrutia, UNAM, Mexico	2005

Workshop on Semiclassical Approximation and Vacuum Energy, Texas A&M University	2005
Eighth Workshop on Non-Perturbative Quantum Chromodynamics, l'Institut Astrophysique de Paris	2004
Sixth Workshop on Quantum Field Theory Under the Influence of External Conditions, QFEXT03, Norman (organizer)	2003
Marcel Grossmann X Meeting on General Relativity, Rio de Janeiro	2003
12th International Colloquium on Quantum Groups, Prague	2003
Workshop on Pseudo-Hermitian Hamiltonians in Quantum Physics, Prague	2003
Casimir Effect: Recent Developments in Experiment and Theory, ITAMP, Harvard-Smithsonian Center for Astrophysics	2002
GRG11: Theoretical and Experimental Problems of General Relativity and Gravitation, Tomsk, Russia	2002
Third International Sakharov Conference, Moscow	2002
American Physical Society, April Meeting, Albuquerque	2002
Fifth Workshop on Quantum Field Theory under the Influence of External Conditions, Leipzig	2001
XXXth International Conference on High Energy Physics, Osaka	2000
Fradkin Memorial Conference, Moscow (plenary speaker)	2000
Symmetry Lost and Found (Steve Adler's <i>Festspiel</i>), Princeton	1999
Fourth Workshop on Quantum Field Theory under the Influence of External Conditions, Leipzig	1998
XXIX International Conference on High Energy Physics, Vancouver	1998
17th Symposium on Theoretical Physics, Seoul	1998
Lattice 96, Washington University, St. Louis	1996
Third Workshop on Quantum Field Theory Under the Influence of External Conditions, Leipzig	1995
Joint April Meeting of APS and AAPT, Washington	1995
International Institute of Theoretical and Applied Physics, Iowa State	1994
Harmonic Oscillators II, Cocoyoc, Mexico	1994
International Europhysics Conference on High Energy Physics, Marseille	1993
Quarks-92, Zvenigorod, Moscow	1992
Beyond the Standard Model II, and SuperSymposium, Norman (organizer)	1990
XXV International Conference on High-Energy Physics, Singapore	1990
From Symmetries to Strings (Okubofest), Rochester	1990
Symposium on Current Topics in Theoretical Physics, UCLA	1988
Eighth Workshop on Grand Unification, Syracuse	1987
Ferst/Sigma Xi Symposium in honor of J. Schwinger, Georgia Tech	1986
Sixth Workshop on Grand Unification, Minneapolis	1985
Fifty Years of Weak Interactions, Wingspread, Racine, Wisconsin	1984
Workshop on Non-Perturbative QCD, Stillwater (organizer)	1983
MASUA Theoretical Physics Conference Columbia, Missouri	1985
Kansas City, Kansas	1984

Manhattan, Kansas	1983
Lawrence, Kansas	1987, 1982
Neutrino Mass Mini-Conference, Telemark, Wisconsin	1982
XXIth International Conference on High Energy Physics, Paris	1982
Third Workshop on Grand Unification, Chapel Hill	1982
1981 International Conference on Neutrino Physics and Astrophysics, Maui	1981
Second Workshop on Grand Unification, Ann Arbor Orbis Scientiæ	1981
Miami Beach	1982
Fort Lauderdale	1981
Nineteenth Eastern Theoretical Physics Conference, Rutgers	1980
XXth International Conference on High Energy Physics, Madison	1980
Supergravity Workshop, Stony Brook	1979
Caltech Workshop	1979
Schwingerfest, UCLA (defacto principal organizer)	1978
Workshop on Classical Particle Electrodynamics, Trieste	1977
International Neutrino Conference, Aachen	1976
International Symposium on Lepton and Photon Interactions at High Energies, Stanford	1975
Sixth Hawaii Topical Conference in Particle Physics	1975
Aspen Center for Physics	1992, 1989–1983, 1980, 1978, 1974
Meetings of the Division of Particles and Fields, American Physical Society	
Williamsburg, Virginia	2002
Fermilab, Illinois	1992
Houston, Texas	1990
Storrs, Connecticut	1988
Santa Fe	1984
Maryland	1982
UCLA	1978
Berkeley	1973
Irvine Conferences	1977, 1975, 1973
International School of Subnuclear Physics, Erice	1970
Scottish Universities Summer School, Edinburgh	1970
Summer School in Theoretical Physics, Boulder, Colorado	1968

PERSONAL DATA

Born: November 29, 1944, La Grande, Oregon, USA
Married to Margarita Baños–Milton,
daughters: Ysabel Alice, Madeleine Diane, Camille Kathryn

SPEAKER AT PUBLIC FORUMS, ETC.

Nuclear Arms Control: Duncan, Bartlesville, Ponca City, Stillwater, OK (1983)
SDI: Stillwater, OK (1985)
Humanities in a Technological Society: Edmond, OK (1986)
Superconducting Super Collider: Oklahoma City (1992) (three times), Ardmore (1993)

Big Science vs. Small Science: An Artificial Division: Oklahoma City (1996)
 Science in the 21st Century: Norman (1997), Oklahoma City (twice), Lindsay, (1998)
 Science and Religion—The Big Bang, the Evolution of the Universe, and All That:
 Oklahoma City (2000–02) (five times), Norman (2000–01) (eight times), Lawton
 (2000), Pryor (2001), Edmond (2002)
 Mininukes, Proliferation, and WMDs:
 Norman (2005), Oklahoma City (2005), Norman (2007), (2008)
 Science vs. Religion—A Physicist Looks at Faith: Oklahoma City (2007),
 Norman (2008), (2009), (2010); Edmond (2009); Norman (2013)
 Nuclear Power: Part of the Answer to Global Warming?: Oklahoma City (2008),
 Edmond (2009), Norman (2011), (2012), Oklahoma City (2015)
 The Large Hadron Collider and the Discovery of the Higgs Boson: Norman (2012),
 (2013) (twice), Paris (2014)
 The Quantum Universe, 4 lectures, Osher Lifelong Learning Institute (2015), (2017)
 The Quantum Enigma, 4 lectures, Osher Lifelong Learning Institute (2017)

COMMITTEE SERVICE

Homer L. Dodge Department of Physics and Astronomy, OU

Graduate Studies Committee	2014–16
Chair and Graduate Liaison	2015–16
Donor Czar	2011–13
Cluster Hire, Chair	2011–13
Departmental Newsletter/Publicity Committee	2011–13
Departmental Centennial Committee, Chair	2008–11
Graduate Recruiting Committee	2006–11
Departmental Search Committee for High-Energy H.L. Dodge Chair	2008
Graduate Liaison and Chair of Graduate Studies Committee	1991–2005
Chair, Faculty Search Committee in High-Energy Phenomenology	1999–2000
Ad hoc Committee for Departmental Program Review	1997
Ad hoc Committee to Revise Tenure and Promotion Criteria	1996
Solid State Search Committee	1993–94
Organizer for <i>Supersymposium</i> and <i>Beyond the Standard Model II</i>	1988–91
Graduate Recruiting Committee (Chairman)	1989–91
Committee A	1987–88
Colloquium Chairman	1987–88
High Energy Search Committee	1988
Library Committee	1987–88
Graduate Studies Committee	1986–87
Needs Committee	1986–87
Astronomy Search Committee	1986–87
University of Oklahoma	
OSLEP Committee	2009–2016
Faculty Awards and Honors Council	2011–13
Presidential Professors Selection Committee	
Graduate Council	2009–12

Representative on Academic Program Review Committee	2011–12
College of Arts and Sciences Tenure and Promotion Committee (Chair 2010-11)	2009–11
Faculty Senate	2008–10
Budget Council, chair 2008–09	2007–10
College of Arts and Sciences Nominations Committee	2007–10
Research Council	2008
Faculty Awards and Honors Council	2004–05
Faculty Senate	2001–04
College of Arts and Sciences Academic Misconduct Board (chair)	2001–02
College of Arts and Sciences Tenure and Promotion Committee	1998–99
Campus Tenure Committee	1995–98
Mathematics Chair Search Committee	1994
Graduate Council	1990–93
Faculty Advisory Committee to the President	1990–92
Campus Environment Subcommittee on Space and Facilities Planning	1986–88
State of Oklahoma	
Superconducting Super Collider Scientific Support Committee	1987–88
Interview panelist for Oklahoma School for Science and Mathematics	1996–2003
Department of Physics, OSU	
Graduate Admissions (Chairman)	1982–85
Personnel Committee	1984–85
Modern Physics Curriculum Committee (Chairman)	1984–85
Graduate Curriculum Committee	1983–84
Preliminary Examination Committee (Chairman 1983–84)	1982–84
Departmental Requirements Committee	1981–82
College of Arts and Sciences, OSU	
Scholarship Committee	1984–85
Member of Delegation Visiting Higher Educational Institutions, Henan Province, Peoples Republic of China, August 1985	

PROFESSIONAL AFFILIATIONS

American Physical Society, Division of Particles and Fields
 American Association for the Advancement of Science
 Sigma Xi

SERVICE TO PROFESSION

- Frequent referee for major journals such as *Nature*, *Nature Physics*, *Nature Photonics*, *Physical Review*, *Physical Review Letters*, *Nuclear Physics*, *Annals of Physics*, *Europhysics Letters*, *Physics Letters*, *Journal of Mathematical Physics*, *Journal of Physics A*, *New Journal of Physics*, *Letters in Mathematical Physics*, *International Journal of Modern Physics*, *Modern Physics Letters*, *European Journal of Physics*, and *American Journal of Physics*. Named “Outstanding Referee” by the American Physical Society, February 1, 2008 (inaugural group).
- Frequent reviewer for funding proposals to public and private funding agencies such as the US Department of Energy, the National Science Foundation, European Science

Foundation, Agence Nationale de la Recherche, the Irish Research Council, International Science Foundation, the Guggenheim Memorial Foundation, and the Research Corporation.

- Served on International Advisory Committee for Beyond the Standard Model III, held at Carleton University, Ottawa, in June 1992; for GRG 11, Theoretical and Experimental Problems of General Relativity and Gravitation, Tomsk, Russia, July 2002; for 7th Workshop on Quantum Field Theory Under the Influence of External Conditions (QFEXT05), Barcelona, September 2005; for the 8th Workshop on Quantum Field Theory Under the Influence of External Conditions (QFEXT07), Leipzig, September 2007; for 60 years of Casimir Effect in Brasilia in June, 2008; for the Friedmann Seminar, João Passoa, Brazil, July, 2008, Rio de Janeiro, June 2011; and for the 10th Conference on Quantum Field Theory Under the Influence of External Conditions (QFEXT11), Benasque, Spain, September 2011. Co-organizer with Astrid Lambrecht of Casimir Physics Workshop at École de Physique des Houches, March 30–April 4, 2014. Co-chair, Symmetry 2017, Barcelona, October 2017. Member of Organizing Committee for Schwinger Centennial, Singapore, February 2018.
- On Advisory Board for *Journal of Physics A* (2005–2015).
- On Editorial Board for *American Journal of Physics*’ Resource Letters (2008–2011).
- On NASA Blue Ribbon Panel to evaluate Quantum Thruster Proposal (2014).
- Served on NSF Review Panels (2018, 2021, 2023)
- On Editorial Board for *Symmetry* (2018–).

Ph.D. STUDENTS SUPERVISED

Walter Wilcox (jointly with J. Schwinger)	1981
Ted Grose	(ABD)
Gary Kohler	(ABD)
Dean Miller	1994
Marios Lymberopoulos	1994
Inés Caveró-Peláez	2005
Kuloth Shajesh	2008
Jeffrey Wagner	2010
Prachi Parashar	2011
Nima Pourtolami	(ABD)
Elom Abalo	2012
Li Yang	2020
Xin Guo	2023

COMMUNITY SERVICE

Member of the Citizen’s Advisory Council for the Norman School Board 1996–97

PUBLICATIONS

Research Papers.

1. Quantum Corrections to Stress Tensors and Conformal Invariance, *Phys. Rev. D* **4**, 3579 (1971).
2. Radiative Corrections for Electron Scattering in an External Field—A New Method of Calculation (with L. L. DeRaad, Jr., R. J. Ivanetich, and W.-y. Tsai), *Phys. Rev.*

- D **5**, 358 (1972).
3. Compton Scattering. I. Spectral Forms for the Invariant Amplitudes to Order e^4 (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **6**, 1411 (1972).
 4. Compton Scattering. II. Differential Cross Sections and Left-Right Asymmetry (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **6**, 1428 (1972).
 5. Second-Order Radiative Corrections to the Triangle Anomaly. I. (with L. L. DeRaad, Jr. and W.-y. Tsai), Phys. Rev. D **6**, 1766 (1972).
 6. Second-Order Radiative Corrections to the Triangle Anomaly. II. (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **6**, 3491 (1972).
 7. Scale Invariance and Spectral Forms for Conformal Stress Tensors, Phys. Rev. D **7**, 1120 (1973).
 8. Weak-Boson Triangle Anomalies (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **8**, 1887 (1973).
 9. Source Theory and Unitarity: A Causal Viewpoint, Phys. Rev. D **8**, 3434 (1973).
 10. Compton Scattering in External Magnetic Fields: Spin-Zero Charged Particles (with L. L. DeRaad, Jr. and N. D. Hari Dass), Phys. Rev. D **9**, 1041 (1974).
 11. Sixth-Order Electron g Factor: Mass-Operator Approach. I. (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **9**, 1809 (1974).
 12. Sixth-Order Electron g Factor: Mass-Operator Approach. II. (with L. L. DeRaad, Jr. and W.-y. Tsai), Phys. Rev. D **9**, 1814 (1974).
 13. Weak Muon Magnetic Moment: A Causal Mass-Operator Calculation (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **9**, 1840 (1974).
 14. Vector Anomaly and the Magnetic Moment of the W Boson (with L. L. DeRaad, Jr. and W.-y. Tsai), Phys. Rev. D **9**, 2847 (1974).
 15. Scalar- and Matter-Dominated Cosmologies in Schwinger's Scalar-Tensor Theory of Gravity (with Y. J. Ng), Phys. Rev. D **10**, 420 (1974).
 16. Compton Scattering in External Magnetic Fields. II. Spin-1/2 Charged Particles (with W.-y. Tsai, L. L. DeRaad, Jr., and N. D. Hari Dass), Phys. Rev. D **10**, 1299 (1974).
 17. Dynamics of the Lense-Thirring Effect, Am. J. Phys. **42**, 911 (1974).
 18. Spectral Forms for the Photon Propagation Function and the Gell-Mann-Low Function, Phys. Rev. D **10**, 4247 (1974).
 19. Compton Scattering in Strong External Electromagnetic Fields (with N. D. Hari Dass, L. L. DeRaad, Jr., and W.-y. Tsai), in *Role of Magnetic Fields in Physics and Astrophysics*, ed. V. Canuto [Ann. N. Y. Acad. Sci., **257**, 72 (1975)].
 20. Verification of Virtual Compton-Scattering Sum Rules in Quantum Electrodynamics (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **11**, 3537 (1975).
 21. Pion Spectrum in Decay of $\psi'(3.7)$ to $\psi(3.1)$ (with J. Schwinger, W.-y. Tsai, and L. L. DeRaad, Jr.), Proc. Nat. Acad. Sci. USA **72**, 4216 (1975).
 22. Resonance Interpretation of the Decay of $\psi'(3.7)$ into $\psi(3.1)$ (with J. Schwinger, W.-y. Tsai, and L. L. DeRaad, Jr.), Phys. Rev. D **12**, 2617 (1975).
 23. Resonance-Model Interpretation of the Decay of $\psi(3.1) \rightarrow \pi^+\pi^-\gamma$ (with W.-y. Tsai and L. L. DeRaad, Jr.), Phys. Rev. D **12**, 2620 (1975).

24. Two Muon Events and New Particle Production (with L. L. DeRaad, Jr.), Phys. Lett. **59B**, 285 (1975).
25. Deep-Inelastic Neutrino Scattering: A Double Spectral Form Viewpoint (with L. L. DeRaad, Jr. and W.-y. Tsai), Phys. Rev. D **12**, 3747 (1975).
26. Vector Anomaly and the Magnetic and Quadrupole Moments of the W Boson (with L. L. DeRaad, Jr. and W.-y. Tsai), Phys. Rev. D **12**, 3972 (1975).
27. Nonrelativistic Dyon-Dyon Scattering (with J. Schwinger, L. L. DeRaad, Jr., W.-y. Tsai, and D. C. Clark), Ann. Phys. (N. Y.) **101**, 451 (1976).
28. Photon Decay into Neutrinos in a Strong Magnetic Field (with L. L. DeRaad, Jr. and N. D. Hari Dass), Phys. Rev. D **14**, 3326 (1976).
29. Strings and Gauge Invariance (with L. L. DeRaad, Jr.), J. Math. Phys. **19**, 375 (1978).
30. Quantum-Electrodynamic Corrections to the Gravitational Interaction of the Electron, Phys. Rev. D **15**, 538 (1977).
31. Quantum-Electrodynamic Corrections to the Gravitational Interaction of the Photon, Phys. Rev. D **15**, 2149 (1977).
32. Casimir Effect in Dielectrics (with J. Schwinger and L. L. DeRaad, Jr.), Ann. Phys. (N. Y.) **115**, 1 (1978).
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