Curriculum Vitae

STEPHEN R. SHARPE

June 26, 2024

Contact Information

Department of Physics
University of Washington
Seattle, WA 98195–1560

phone: (206) 685-2395
fax: (206) 685-0635
email: srsharpe@uw.edu

Education

Ph.D. Physics, University of California, Berkeley, 1983 (Advisor, Michael Chanowitz)
B.A. Theoretical Physics, Trinity College, Cambridge University, 1978

Research and Professional Experience

2024-present, Professor Emeritus, University of Washington
1995-2024, Professor, University of Washington
1991-1995, Associate Professor, University of Washington
1988-1991, Assistant Professor, University of Washington
1986-1988, Five-year Research Associate, SLAC
1983-1986, Junior Fellow, Harvard Society of Fellows

Visiting Positions

Visiting Professor, Kyoto University, 2019
George Southgate Fellow, University of Adelaide, 2019
Visiting Professor, University of Marseille, 2008
Visiting Professor, University of Southampton, 2004
Visiting Professor, University of Tsukuba, 1998
Visiting Professor, University of Rome, 1996
Visiting Staff Scientist, CEBAF (now Jefferson Lab), 1991-2
Visiting Research Physicist, UC Santa Barbara, 1990

Honors and Awards

Graduate Teaching Award, Physics Department, UW, 2021
Graduate Teaching Award, Physics Department, UW, 2020
Undergraduate Teaching Award, Physics Department, UW, 2015
Undergraduate Teaching Award, Physics Department, UW, 2014
Graduate Mentoring Award, Physics Department, UW, 2013
Graduate Teaching Award, Physics Department, UW, 2011
Graduate Teaching Award, Physics Department, UW, 2008
Outstanding Referee, American Physical Society, 2007
Graduate Teaching Award, Physics Department, UW, 2000
Graduate Teaching Award, Physics Department, UW, 1999
Fellow, American Physical Society, 1993
Alfred P. Sloan Foundation Fellow, 1990-1994
DOE Outstanding Junior Investigator, 1989-1991
Bernard Friedman Memorial Prize in Applied Mathematics, Berkeley, 1982

Ver Hayden de Lancey Prize, Trinity College, Cambridge, 1978

University & Department Service (major responsibilities only)
Associate Chair, Physics Department, 2009-2011, 2019-2024
Chair, Climate and Diversity Committee, 2021-2024
Chair, Undergraduate Mentoring Program, 2023-2024 Member, Executive Committee, Physics Department, 1999-2001, 2007-2011, 2019-2024
Chair, Graduate Advising Committee, 2020-2022
Chair, Theoretical Physics Search Committee, 2019-20
Chair, Majors Committee, 2016-18
Chair, Search Committee for Physics Education Research position, 2015-16
Member, Graduate School Council, 2008-2011
Graduate Program Coordinator, Physics Department, 2002-2011
Chair, Graduate Committee, Physics Department, 2001-2
Chair, Undergraduate Committee, 1995-6

Ph.D. advisees
Wilder Schaaf, Ph.D., expected 2026-7
Zack Draper, Ph.D., 2024
Huangyu Xiao, Ph.D., 2022
Tyler Blanton, Ph.D., 2021
Fernando Romero-López (co-advisor, University of Valencia), Ph.D., 2021
John Lombard, Ph.D. 2018
Derek Horkel, Ph.D. 2016
Max Hansen, Ph.D., 2014
Mateusz Koren, (visiting student from Jagiellonian University, Krakow), Ph.D. 2013
Andrew Lytle, Ph.D. 2010
Ruth van de Water, Ph.D. 2005
Jackson Wu, Ph.D. 2005
Noam Shoresh, Ph.D. 2001 (co-chair)
Yan Zhang, Ph.D. 1997
Keith Clay Ph.D. 1995 (co-chair)
Greg Kilcup (unofficial advisor), Harvard Ph.D. 1985

M.S. advisees
Fergus Spain, M.S., 2022

Professional Service
Editor, JHEP, 2015-present
Member, Particle Data Group, 2011-present
Member, Advisory Board, Flavor Lattice Averaging Group, 2022-present
Member, International Advisory Committee, Chiral Dynamics 2024 (Bochum, Germany)
Co-chair, organizing committee, Conference for Undergraduate Women in Physics (CUWiP) at University of Washington, January 20-22, 2023
Member, Editorial Board, Flavor Lattice Averaging Group, 2014-2022
Lattice coordinator, Chamless Hadronic B Decay & Charm working groups, "Belle-2-Theory Interface Platform", 2014-2019

Organizer, "Scattering amplitudes and resonance properties from Lattice QCD", workshop at the Mainz Institute for Theoretical Physics, August 27-31, 2018
Organizer, "Multi-hadron systems from lattice QCD", workshop at the Institute for Nuclear Theory, Feb. 5-9, 2018
Member, International Adv. Comm., "Lattice 2018", Michigan State, 2018
Member, International Adv. Comm., "Chiral Dynamics", Durham, NC, 2018
Member, Advisory committee, RIKEN/BNL Research Center, 2015-2018
Member, Internation Adv. Comm., "Hadrons and Hadron Interactions in QCD," Yukawa Institute workshop, Kyoto, Japan 2015
Convener, ICHEP 2014, Valencia, Spain
Member, Steering Committee, Topical Panel on Computing in High Energy Physics, DOE, 2013-14
Member, International Adv. Comm., "Chiral Dynamics 2015", Pisa, Italy, 2015
Chair, Ken Wilson Lattice Award Committee, 2014
Vice-Chair, Ken Wilson Lattice Award Committee, 2013
Member, Flavor Lattice Averaging Group, 2011-2014
Member, US National Lattice QCD Collab. Exec. Committee, 1999–2012
Member, International Adv. Comml, "Chiral Symmetry in Hadrons and Nuclei", Beijing, China, 2013
Member, International Adv. Comm., "Lattice 2013", Mainz, Germany, 2013
Member, International Adv. Comm., "Lattice 2012", Cairns, Australia, 2012
Member, International Adv. Comm., Parma School of Theoretical Phyiscs, 2009-present
Member, International Adv. Comm., "Lattice 09", Beijing, China, 2009
Member, DOE-HEP Early Career Award Panel, 2009
Panel chair, DOE workshop on "Extreme Scale Computing", Kavli Institute, SLAC, December 2008
Organizer, INT summer school "Lattice QCD and its Applications", August 2007
Member, US Lattice Coll. Scientific Program Committee, 2002–2007
Member, International Adv. Comm., "Lattice 07", Regensberg, Germany, 2007
Member, Riken-Brookhaven Review Committee, 2003–2006
Member, International Adv. Comm., "CKM 2006", KEK, Japan, 2006
Member, Editorial Board, Physical Review D, 2003–2005
Member, Sakurai Prize Committee of the APS, 2004–5
Member, International Adv. Comm., "Lattice 05", Dublin, Ireland, 2005
Member, International Adv. Comm., "CCP 2004", Genoa, Italy, 2004
Member, International Adv. Comm., "Lattice 04", Fermilab, USA, 2004
Member, International Adv. Comm., "Lattice 03", Tsukuba, Japan, 2003
Member, Organizing Comm., INT-JLAB Workshop in "Gluonic Excitations", JLAB, May 2003
Member, International Adv. Comm., "Lattice 02", Boston, USA, 2002
Member, International Adv. Comm., "Lattice 01", Berlin, Germany, 2001
Organizer of Workshop "Lattice QCD and Hadron Phenomenology", INT, Seattle, Autumn 2001
Member, Local Organizing Committee for "Lattice 98", Boulder, Colorado, 1998
Organizer of INT Workshop "Improved Actions for Lattice QCD", September 1996
Divisional Associate Editor, Physical Review Letters, 1994–1996
Member, Scientific Advisory Committee, 10'th Aspen Winter Conference, 1994
Organizer, INT program and Summer School, *"Phenomenology and Lattice QCD,"* Seattle, 1993
Member, International Adv. Comm., "Lattice 92", Amsterdam, 1992
Member, International Adv. Comm.,"Lattice 91", Tsukuba, Japan, 1991

Coordinator, Institute for Theoretical Physics program *"Lattice Gauge Theory: Standard Model and Beyond"*, Santa Barbara, 1990

Classroom Teaching (all at UW)
Graduate Quantum Mechanics (Phys 517-9): 1995-6, 2007, 2009-2011, 2018, 2019-22, 2025
Particle Physics I (Phys 557): 2017-18, 2023-24
Particles and Symmetries (Phys 226): 2015, 2016, 2017
Lattice Field Theory and Applications (Phys 578): 2014, 2023
Elementary Mathematical Physics (Phys 227-8): 2012-15
Physical Applications of Group Theory (Phys 507): 2009, 2013, 2015, 2017, 2022-23
Senior & Honors Seminars: 1993, 2005, 2008
Graduate Mechanics (Phys 505): 2006-8
Introductory Calculus-based Physics (Phys 121-3): 1988-3, 2005, 2007, 2008, 2016
Honors Introductory Physics (Phys 121H-123H): 2001-4
Quantum Field Theory–special topics (Phys 578): 2001
Advanced Quantum Mechanics & Intro. to Field Theory (Phys 520-2): 1997-2001
Statistical Mechanics (Phys 328): 2004
Particle Physics II(Phys 558-9): 1988-9, 1994, 2024

Invited Lecture Series & Plenary Conference Talks
Multiparticle Scattering from Lattice QCD, Invited plenary talk at "Amplitudes 2024", IAS, Princeton, USA, June 2024
Multihadron physics from Lattice QCD, 3 lectures at Summer School on "Methods of Effective Field Theory and Lattice Field Theory", Bad Honnef, Germany, July 2023
Multihadron physics from Lattice QCD, 4 lectures at School on "Frontiers of Lattice QCD", Beijing, China, June-July 2019
Effective Field Theories for Lattice QCD, 4 lectures at School and Workshop on "New Horizons in Lattice Field Theory", Natal, Brazil, March 2013
Future Applications of Lattice QCD for High Energy Physics, INT summer school, August 2012
Exploring the large N limit of lattice QCD, International Symposium "From Quarks to Supernovae", Izu, Japan, November 2010
Lattice QCD—a robust tool for precise calculations, Symposium in honor of Jan Smit's retirement, Amsterdam, Holland, August 2008
Applications of Chiral Perturbation to Lattice QCD, 3 lectures at "Physique subatomique et calculs sur reseau", summer school, Marseille, France, June 2008
Rooted staggered fermions: good, bad or ugly?, Int. Symp. on Lattice Field Theory, "Lattice 2006", Tucson, Arizona, July 2006
Applications of chiral perturbation theory to lattice QCD, 3 lectures at workshop on "Perspectives in Lattice QCD", Nara, Japan, November 2005.
Introduction to chiral perturbation theory, 6 lectures at Univ. Southampton, England, November 2004
Applications of chiral perturbation theory to lattice QCD, 3 lectures at school on "Masses of Hadrons", Bad Honnef, Germany, October 2003
Chiral perturbation theory for lattice practitioners, 3 lectures at Seoul National University, South Korea, May 2002
Chiral perturbation theory for lattice practitioners, 3 lectures at workshop on "Effective Theories,

Renormalization and Matching", Univ. Southampton, England, January 2002
Chiral perturbation theory and its applications to lattice results, 10 lectures at Univ. Tsukuba, Japan, Autumn 1998
Progress in Lattice Gauge Theory, Int. Conf. on High Energy Physics, Vancouver, Canada, July 1998
Introduction to chiral perturbation theory, 8 lectures at University of Rome, Italy, Autumn 1996
Chiral perturbation theory and weak matrix elements, Int. Symp. on Lattice Field Theory, "Lattice 96", St. Louis, Missouri, June 1996
Phenomenology from the Lattice, 4 lectures at Theoretical Advanced Study Institute, Boulder, Colorado, July 1994
Introduction to lattice gauge theory, 5 lectures at Uehling summer school, INT, UW, June 1993
Lattice Field Theory, Division of Particles and Fields meeting, American Physical Society, Fermilab, Chicago, November 1992
Lattice gauge theory, 6 lectures at British Universities Summer School on elementary particle physics, Edinburgh, Scotland, September 1992
Chiral perturbation theory, the quenched approximation and finite volume effects, 5 lectures at the UK High Energy Physics Institute, Durham, England, September 1992
Towards the continuum limit of staggered weak matrix elements, Int. Symp. on Lattice Field Theory, "Lattice 91", Tsukuba, Japan, November 1991
Lattice gauge theory, 12 lectures at Jefferson Lab, Newport News, Virginia, Autumn 1991
Lattice results for hadron masses and weak matrix elements, Zakopane spring school, Poland, June 1990
Electroweak matrix elements, "Lattice 89", Capri, Italy, September 1989

Seminars, Colloquia & Conference Talks (since 2014)
Lattice QCD: Past, Present, & Future, Invited talk at Workshop on Lattice QCD, Seoul National University, May 23, 2025
Multiparticle scattering amplitudes from Lattice QCD, Invited talk at at KITP/Simons conference "Lattice and continuum approaches to strongly coupled QFT," UCSB, March 2025
Scattering amplitudes from Lattice QCD, invited talk at KITP program "What is Particle Theory?," UCSB, February 2025
Three-particle formalism for multiple channels: the $\eta\pi\pi + K\bar{K}\pi$ system in isosymmetric QCD," contributed talk at Lattice 2024 conference, Liverpool, UK, July, 2024
Progress in calculating multiparticle amplitudes from Lattice QCD*, Particle Theory seminar, UW, October, 2023*
Progress in calculating multiparticle amplitudes from Lattice QCD*, invited seminar, Bay Area Particle Theory Seminar, SFSU, October 2023*
Overview and status of methods for 3 particles*, invited talk at "Lattice QCD and Probes of New Physics", Santa Fe Workshop, New Mexico, August 2023*
Resolving the left-hand cut problem in lattice studies of the doubly-charmed tetraquark*, contributed talk at LATTICE 2023, Fermilab, August 2023*
Progress in calculating multiparticle amplitudes from Lattice QCD*, invited colloquium, Laboratory for Nuclear Science, MIT, May 8, 2023*
Three spinning particles and some takeaways*, invited talk at the INT workshop "Accessing and Understanding the QCD Spectra", March 2023*
Implementing the three-particle quantization condition for $2+1$ systems: theoretical issues*, invited*

talk at the Bethe Forum on Multiparticle Dynamics in a Box, August 2022
$\pi^+\pi^+K^+$ and $K^+K^+\pi^+$ interactions from the lattice*, contributed talk at LATTICE 2022, Bonn, Germany, August 2022.*
Progress in multihadron amplitudes from the lattice*, invited seminar/colloquium at the University of Valencia, Spain, September 2021*
Three-particle quantization condition for nondegenerate particles*, contributed talk at LATTICE 2021 (remote), July 2021*
Generalizing the Lellouch-Luscher formula to three-particle decays*, contributed talk at HADRONS 2021 (remote), July 2021*
View from the front line: simulations of quantum chromodynamics and the continuum limit*, invited (remote) talk at "Constructing Quantum Theories," workshop, Philosophy Department, UW, May 2021*
Three-particle interactions from lattice QCD*, invited (remote) seminar at the University of Maryland, September 2020*
Equivalence of relativistic three-particle quantization conditions*, contributed (remote) talk at APLAT 2020, August 2020*
$I = 3$ three-pion scattering amplitude from Lattice QCD*, contributed talk at Sante Fe workshop on "Lattice QCD", August 2019*
Implementing the three-particle quantization condition: a progress report*, invited seminar at Santa Fe workshop on "Lattice QCD", August 2019*
Implementing the three-particle quantization condition: a progress report*, invited seminar at CERN workshop, July 2019*
Implementing the three-particle quantization condition: a progress report*, invited seminar at YITP, Kyoto at FLQCD19 workshop, Apriil 2019*
Scattering observables from Lattice QCD: progress in three-particle channels*, seminar at INT, Seattle, March 2019*
Lattice QCD: successes, challenges and future outlook*, invited colloquium at University of Adelaide, February 2019*
Scattering observables from Lattice QCD: progress in three-particle channels*, invited seminar at University of Adelaide, February 2019*
Scattering observables from Lattice QCD: progress in three-particle channels*, invited talk at MIAPP workshop on "Interface of Effective Field Theories and Lattice Gauge Theory,", Munich, November 2018*
Scattering observables from Lattice QCD: progress in three-particle channels*, invited seminar at U. Valencia, Spain, October 2018*
Progress on the relativistic three-particle quantization condition*, invited talk at MITP workshop on "Scattering amplitudes and Resonance Properties from Lattice QCD", August 2018*
Progress on the relativistic three-particle quantization condition*, contributed talk at Lattice 2018, July 2018*
Workshop goals and introduction to Lüscher formalism for two particles*, talk at INT workshop on "Multihadron physics from Lattice QCD", February 2018*
Scattering observables from lattice QCD: progress in two- and three-particle channels*, seminar at Stanford Linear Accelerator Center, September 2017*
Numerical experiments with three-particle quantization condition*, contributed talk at Santa Fe workshop on Lattice QCD, September 2017*

Multihadron observables from lattice QCD*, invited talk at Santa Fe workshop on Lattice QCD, August 2017*

Scattering observables from lattice QCD: progress in three-particle channels*, seminar at Lawrence Berkeley Lab, March 2017*

Lattice QCD: successes, challenges and future outlook*, colloquium at San Francisco State University, March 2017*

Phase structure of Wilson and twisted-mass femions in the presence of isospin breaking*, seminars at Universities of Bonn and Mainz, July 2016*

Future of Chiral Perturbation Theory for Lattice QCD*, invited talk at Symposium on "Effective Field Theories and Lattice Gauge Theory", Munich-IAS, May 2016*

Chiral Perturbation Theory and Lattice QCD*, invited talk at "BernardFest2016", Washington Univ., St. Louis, March 2016*

Multiparticle processes from lattice QCD*, invited talk at workshop on "QCD for New Physics at the Precision Frontier," INT, Seattle, September 2015*

Multiparticle processes from lattice QCD*, invited talk at workshop on "High-precision QCD at low energy," Centro de Ciencias, Benasque, Spain, August 2015*

Lattice QCD: successes, challenges and future outlook*, colloquium at UCSC, May 2015*

Three particle scattering amplitudes from finite volume simulations*, invited talk at workshop on "Hadrons and Hadron Interactions in QCD 2015", Yukawa Institute, Kyoto, March 2015*

Finite volume quantization conditions for multiparticle states*, invited talk at workshop on "Multi-hadron and Nonlocal matrix Elements in Lattice QCD", Brookhaven Nat. Lab., February 2015*

Extracting three particle scattering amplitudes from the finite volume spectrum*, invited seminar at Jefferson Lab., December 2014*

Applying chiral perturbation theory to LQCD: successes and challenges*, invited talk at "CreutzFest 2014", BNL, September 2014*

Three-particle quantization condition: an update*, contributed talk at "Lattice 2014", Columbia Univ., June 2014*

Kaons and long-distance meson mixing from lattice QCD*, invited talk at "Lattice QCD meets Experiment 2014", Fermilab, March 2014*