

Steven Laurens Manly

Professional preparation:

Pfeiffer College, Misenheimer, NC, chemistry/mathematics/physics, B.A. (1982)

Columbia University, New York, NY, particle physics, Ph.D. (1989)

Yale University, New Haven, CT, particle physics, Postdoc (1988-1990)

Appointments:

Univ. of Rochester – Professor of Physics (2009-present)

Univ. of Rochester – Director of Undergraduate Research (2008-present)

Univ. of Rochester - Associate Professor of Physics (1998-2009)

Univ. of Rochester - Mercer Brugler Distinguished Teaching Professor (2002-2005)

Yale University - Associate Professor of Physics (1996 - 1998)

Yale University - Assistant Professor of Physics (1990 - 1996)

Research activities:

- (present) High energy particle physics – accelerator-based studies of neutrinos
 - DUNE collaboration at FNAL (IL) – <http://dunescience.org> ;
 - Minerva collaboration at FNAL (IL) – <http://minerva.fnal.gov/> ;
 - T2K collaboration at JPARC (Japan) - <http://t2k-experiment.org/> ;
 - eA scattering at JLab (Va) – CLAS collaboration <http://www.jlab.org/Hall-B/> .
- (present) Review of evidence of time dependent nuclear activity.
- (past) Relativistic heavy ion physics (<http://www.phobos.bnl.gov/>), Z boson physics in e^+e^- collisions, High energy e^+e^- colliders, gravitational experiments using optical fibers.

Books:

- *Visions of the Multiverse*, New Page Books, 2011;
- *Relativity and Quantum Physics for Beginners*, Steerforth Press, 2009.

Selected publications (out of roughly 100 peer-reviewed journal articles):

- *Measurement of electron neutrino quasielastic and quasielastic-like scattering on hydrocarbon at an average neutrino energy of 3.6 GeV*, MINERvA Collaboration, J. Wolcott *et al.*, accepted for publication by Physical Review Letters, 2016;
- *Precise measurement of the neutrino mixing parameter θ_{23} from muon neutrino disappearance in an off-axis beam*, T2K Collaboration, K. Abe *et al.*, Phys. Rev. Lett., **112**:181801, 2014;
- *Observation of electron neutrino appearance in a muon neutrino beam*, T2K Collaboration, K. Abe *et al.*, Phys. Rev. Lett., **112**:061802, 2014;
- *Measurement of ratios of muon neutrino charged-current cross sections on C, Fe, and Pb to CH at neutrino energies 2-20 GeV*, MINERvA Collaboration, B.G. Tice *et al.*, Phys. Rev. Lett., **112**:231801, 2014;
- *Measurement of muon neutrino quasi-elastic scattering on a hydrocarbon target at an average neutrino energy of ~ 3.5 GeV*, MINERvA Collaboration, G.A. Fiorentini *et al.*, Phys. Rev. Lett., **111**:022502, 2013;
- *Measurement of muon anti-neutrino quasi-elastic scattering on a hydrocarbon target at an average neutrino energy of ~ 3.5 GeV*, MINERvA Collaboration, L. Fields *et al.*, Phys. Rev. Lett., **111**:022501, 2013;

- *Measurement of the inclusive muon neutrino charged current cross section on carbon in the near detector of the T2K experiment*, T2K Collaboration, K. Abe *et al.*, Phys. Rev. **D87** (2013) 092003;
- *Centrality and pseudorapidity dependence of elliptic flow for charged hadrons in Au+Au collisions at $\sqrt{s_{NN}}=200\text{GeV}$* , Phobos Collaboration, B. Back *et al.*, Phys. Rev. **C72**: 051901, 2005;
- *Experimental feasibility of measuring the gravitational redshift of light using dispersion in optical fibers*, S. Manly, E. Page, Phys. Rev. D **63**:062003, 2001;
- *Precise measurement of the left-right cross-section asymmetry in Z boson production by e^+e^- collisions*, SLD Collaboration, K. Abe *et al.*, Phys. Rev. Lett. **73**, 25 (1994);
- Baker *et al.*, Phys. Rev. D **41**, 2653 (1990).

Selected other activities:

- Member of international advisory board for the Neutrino Physics Center at Fermi National Accelerator Laboratory
- Member of the scientific advisory committee for the International Workshop on Neutrino-Nucleus Interactions in the Few GeV Region (NUINT)
- Director of the Department's PREP program (Pre-college Experience in Physics) (2006-present), Director of the Department's undergrad Teaching Internship program (2007-present);
- Chair of College Teaching, Learning, and Technology Roundtable (2003-2008);
- Undergraduate academic pre-major advisor (10-20 students per year);
- Consultant to Yale University administration on Yale-NUS College project (2011);
- Journal article and proposal referee/reviewer for *Phys. Rev. D*, *Physical Review Letters*, *Mod. Physics A*, *J Physics G*, Particle Data Group, Department of Energy office of Nuclear Physics and Office of High-energy Physics, National Science Foundation;
- Selected Departmental and University committees: CIO search, medical center committee on scientific publishing, numerous faculty searches, departmental colloquium, high energy and nuclear seminar, departmental teaching improvement committee, College web portal committee, College committee on experiential learning

Selected recent grant support:

- 07/2012-03/2019 *Theoretical and experimental studies of elementary particle physics* (PI), \$2,8700,00.00, Department of Energy (Division of High Energy Physics);

Awards:

- 2015 Breakthrough Foundation Prize in Fundamental Physics
- 2010 University of Rochester Student Association Award for Excellence in Undergraduate Teaching in the Natural Sciences;
- 2008 Award for Excellence in Undergraduate Teaching in the Department of Physics and Astronomy at the University of Rochester;
- 2007 American Association of Physics Teachers (AAPT) Award for Excellence in Undergraduate Teaching;
- 2003 NY State Professor of the Year (Carnegie Foundation);
- Mercer Brugler Distinguished Teaching Professor at the University of Rochester, 2002-2005;
- Honorary member of the UR chapter of the Golden Key International Honor Society.

Graduate and postdoctoral advisees during the past 5 years:

Former postdoctoral advisees: Dr. Inkyu Park (Professor, University of Seoul, Korea), Dr. Robert Bradford (staff, Argonne National Laboratory) (co-advised with McFarland), Dr. Aaron McGowan (co-advise with McFarland), Dr. Gabriel Perdue (co-advised with McFarland), Dr. Laura Liacono (co-advise with McFarland)

Current postdoctoral advisees: Dr. Phil Rodrigues (co-advise with McFarland), Dr. Daniel Ruterbories (co-advise with McFarland), Dr. Tomecz Golan (co-advise with McFarland)

Former graduate students: Dr. Eric Page (Professor, University of San Diego), Dr. Joshua Hamblen, (Assistant Professor, University of Tennessee, Chattanooga), Mr. Adam Harrington (Hitachi Corporation), Mr. James Steinman (pursing career in medical physics), Dr. Peter Walters, Dr. Jesse Chvojka (secondary advisor), Dr. Melanie Day (secondary advisor, now postdoc at Univ. Wisconsin), Dr. Jaewon Park (secondary advisor, now postdoc at Virginia Tech), Dr. Jeremy Wolcott (postdoc, Tufts Univ.)

Current graduate students: Mr. Hyup-Woo Lee, Mr. Chris Marshall (secondary adviser), Mr. Aaron Bercellie (secondary advisor), Mr. Ko Iwamoto (secondary advisor), Mr. Robert Fine (secondary advisor), Mr. Jeffrey Kleykamp, Mr. Aaron Mislivec (secondary advisor), Tejin Cai (secondary advisor), Gonzalo Diaz (secondary advisor)