Work:
MS 70-319
One Cyclotron Road
Lawrence Berkeley National Laboratory
Berkeley, CA 94720

Work Phone 510 486-5031
E-Mail HSMatis@lbl.gov

Home:
6824 Sherwick Drive
Berkeley, CA 94705

Home Phone 510 540-6718
E-Mail HSMatis@gmail.com

Howard S. Matis

Professional Experience

2012 – Present Lawrence Berkeley National Lab – Berkeley, CA
Staff Physicist Affiliate

- Continuing education outreach.
- Leading the Contemporary Physics Education Project to e-commerce on Amazon.com.
- CERN luminosity detector at Large Hadron Collider.
- Consultant to SBIR/STTR proposals.
- Panelist for NSF GRFP graduate fellowships and DOD NDSEG fellowships.
- Detector development for a Dark Matter experiment.

2014 – Present MTX/MYNOSYS – Berkeley, CA
Consultant

- Designed software to test medical devices for ophthalmic surgery.

1983 – 2012 Lawrence Berkeley National Lab – Berkeley, CA
Staff Physicist

- Bevalac Scientific Liaison Officer (1983-1988). Reestablished the Bevalac Users Organization. Scientific Liaison for Bevalac experiments.
- Integration Physicist for the STAR experiment at RHIC (1993-1999). Responsible for designing and coordinating the infrastructure of a $40 million dollar detector. Member of STAR Operational Committee (1993-2000).
- Past research included deep-inelastic muon scattering at Fermilab, searches for rare muon decays at LAMPF, studies of dileptons from the Bevalac (DLS experiment), investigation of the nuclear equation of state (EOS experiment), and various searches for free-fractional charge at CERN, Fermilab, and BNL.
- Member of LBNL Amanda team that deployed a digital photon detector for neutrinos at the South Pole. IceCube, a next generation high-energy neutrino detector at the South Pole.
- Studying Heavy-Ion Collisions using the STAR Detector – Brookhaven National Laboratory (BNL), Upton, NY. Building a high-resolution vertex detector in STAR using CMOS technology. Subsystem manager for Silicon Strip detector that is part of the new STAR vertex detector.
- Built, tested, and simulated the luminosity detector that is being used at the Large Hadron Collider (LHC) at CERN – Geneva, Switzerland.

1978 – 1983 Los Alamos National Laboratory – Los Alamos, NM
Postdoctoral Fellow/Staff Member

- Designed experiment for searches for rare decays of muons. Acted as Co-Spokesman.

1976 – 1978 University of Chicago – Chicago, IL
Postdoctoral Fellow

- Co-author of pioneering paper on quark structure of the proton.
- Searched for rare decays of muons.

Selected Additional Professional Activities

Awarded the 2017 "Excellence in Physics Education" from the American Physical Society – selected as president of Contemporary Physics Education Project.

American Physical Society (APS) – Fellow.

American Association for the Advancement of Science (AAAS) – Fellow.

American Physical Society – California Section. Vice Chair (2006-2007), Chair Elect (2008), Chair (2009), Past Chair (2010).

American Physical Society–Division of Nuclear Physics. Home page committee (1998-2001). Education committee (2000-2007). DNP Mentor Award committee (2007).

Contemporary Physics Education Project. President (2012–present), Vice-President for Nuclear Physics (1997-2012). Board of Directors (1998-present). Leader of a group that produced widely used wall chart on nuclear physics for high school and college students. Editor for accompanying text: *Nuclear Science—A Teacher's Guide to the Nuclear Science Wall Chart.*

LBNL Nuclear Science Division Education Committee. Chairman (1993-1998). Developed curriculum entitled *ABC's of Nuclear Science*. This includes text and demonstrations. Created widely used web site, www.lbl.gov/abc for the use of high school and college students.

American Institute of Physics, William F. and Edith R. Meggers Project Award, 1996. This project has lead to an inexpensive cosmic ray detector that is used throughout the world.

North California Chapter of the Society for Technical Communication. Distinguished Award - 2000.

Outstanding Performance Award, Lawrence Berkeley National Laboratory 1991, 1997, 2002.

U.S. Department of Energy, Office of Science, Outstanding Mentor Award, 2008.

Service award from the American Physical Society California Section, 2011.

Education

1970 - 1976 The University of Chicago, Chicago, IL
Physics - Ph.D. (1976) and S.M. (1971)

1966 - 1970 Rensselaer Polytechnic Institute, Troy, NY
Physics - B.S. (1970)

Selected Papers of more than 600

A Determination of the Quark and Gluon Moments of the Nucleon. H.L. Anderson, H.S. Matis, L.C. Myrianthopoulos, Phys.Rev.Lett.40: 1061, 1978 (Joint author).

Using an active pixel sensor in a vertex detector. H.S. Matis et al. Nucl. Instrum. Meth. A549: 130-136, 2005 (Principal author).

A proposed STAR microvertex detector using Active Pixel Sensors with some relevant studies on APS performance. S. Kleinfelder et al. 2006 Nucl. Instrum. Meth.A565: 132-138, 2006 (Principal author).

The IceCube Data Acquisition System: Signal Capture, Digitization, and Timestamping. R. Abbassi *et al.*, Nuclear Instruments & Methods **A601**, 294 (2009) (Principal author).

"The BRAN luminosity detectors for the LHC", H. S. Matis et al., PAC11 proceedings, MOP202. Nuclear Instruments & Methods **A848**, 114 (2017). (Principal author)

Community Activities

North Hills Phoenix Association, One of the founders in 1991, Treasurer 1993-2008, Webmaster 1998-2008.

City of Oakland Parks and Recreation Board, member 2006-2012.

Fourth Bore Coalition, Treasurer 2007-present.

Organizing for Action, 2014-present.

Community Awards

1991 Montclair Soccer Club Presidential Award

1994 Outstanding Award in Support of Youth Soccer

2008 University of Chicago Sydney A. Rosen Award

2008 Hero Award from the City of Oakland

2013 Massapequa High School Hall of Fame