

David Nygren

Biographical Sketch

Education and Training

Whitman College, Washington
University of Washington, Seattle, Washington
Nevis Laboratories, Columbia University, New York

Mathematics and Physics
Physics
Postdoctoral researcher

B.A., 1960
Ph.D., 1967
1967-1969

Research and Professional Experience

2014 – Presidential Distinguished Professor, The University of Texas at Arlington
2014-2015 Division Director, Acting, LBNL Physics Division
2004-2014 Distinguished Scientist, LBNL
1999-2009 LBNL Senior Staff
1997-2004 Physics Division Fellow, LBNL
1992-1997 Senior Research Associate, Nevis Laboratories
1990-1992 Assistant Professor, Columbia University

Selected Publications (ordered by relevance)

1. "Operation and first results of the NEXT-DEMO prototype using a silicon photomultiplier tracking array", NEXT Collaboration, *Journal of Instrumentation* 8 (2013) P09011
2. "Ionization and scintillation response of high-pressure xenon gas to alpha particles", NEXT Collaboration, *Journal of Instrumentation* 8 (2013) P05025,
3. "Near-Intrinsic Energy Resolution for 30 to 662 keV Gamma Rays in a High Pressure Xenon Electroluminescent TPC", NEXT Collaboration, *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 708 (2013) 101-114,
4. "High-pressure Xenon Gas Electroluminescent TPC for 0- ν $\beta\beta$ Decay Search", D. Nygren, *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* **603** (2009) p337-348
5. "Optimal detectors for WIMP and 0- ν $\beta\beta$ searches: Identical high-pressure xenon gas TPCs" D. Nygren, *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*. **581** (2007) 632-642
6. "First Observation of PeV-energy Neutrinos with IceCube", IceCube Collaboration, *Physical Review Letters* 111 (2013) 021103, arXiv:1305.5356
7. "A negative-ion TPC with ultra-high energy resolution for 0- ν double beta decay search in ^{136}Xe ", D. R. Nygren. *Third Symposium on Large TPCs for Low-energy Rare Events* (Paris, France, 11-12 December 2006) *Journal of Physics: Conference Series* **65** (2007) 012003 doi:10.1088/1742-6596/65/1/012003
8. "High Resolution X-ray Imaging Using a Silicon Strip Detector", E. Beuville, R. Cahn, B. Cederstrom, M. Danielsson, A. Hall, B. Hasegawa, L. Luo, M. Lundqvist, D. Nygren, E. Oltman, J. Walton, *IEEE Transactions of Nuclear Science* 45: 3059-3063 (1998).
9. "Measurement of the Kaon Content of Three Prong τ Decays", by TPC/Two Gamma Collaboration, *Physical Review D* 50:13 (1994).
10. "Performance of a Time Projection Chamber", D. Fancher, H.J. Hilke, S. Loken, P. Martin, J.N. Marx, D.R. Nygren, P. Robrish, G. Shapiro, M. Urban and W. Wenzel, *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 161:383 (1979).

Synergistic and Public Service Activities

1. DOE Review of LZ –CD2/3 April 2016
2. DOE Review of National Laboratory R&D
3. DOE Institutional Review of FNAL – February 2015
4. DOE Particle Detector R&D Review Panel– November 2013
5. DPF Snowmass 2013: Advisor for Gas Detection Techniques
6. DOE Early Career Award: Proposal Review Committee 2013
7. DOE Review of Samurai TPC Project MSU, 2013

Collaborators

IceCube Collaboration
NEXT Collaboration

Collaborators and Co-editors:

Azriel Goldschmidt, LBNL, Nuclear Science Division
Juan Jose Gomez-Cadenas, IFIC, Valencia, Spain
Francis Halzen, University of Wisconsin, Madison
John Hauptman, Iowa State University
James Siegrist, Director, Office of High Energy Physics, DOE
Bob Stokstad, LBNL, Nuclear Science Division, retired

Graduate and Postdoctoral Advisors and Advisees:

Graduate – Robert W. Williams, University of Washington, Seattle
Postdoctoral – Jack Steinberger, Columbia University, New York

Thesis Advisor and Postgraduate-Scholar Sponsor:

Graduate Students:

Jordan Benson (current), Marjorie Shapiro (now at UC Berkeley), Nick Hadley (now at University of Maryland), John Huth (now at Harvard University)

Postgraduate-scholars:

Ben Jones (now at UTA), Carlos A. B. de Oliveira

