

Curriculum Vitae — October 19, 2019

Heidi M Schellman

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1 Education and Employment

Primary Position	Joint Appointment
Professor and Head of Physics College of Science Oregon State University	Visiting Scientist Scientific Computing Fermilab

Area of Interest: Experimental High Energy Physics

Education

B. S. Degree, June 1977, Stanford University (Mathematics)
M.A. Degree, June 1980, University of California. Berkeley (Physics)
Ph.D. Degree, December, 1984, University of California. Berkeley (Physics)
Ph.D. Advisor: George Trilling

Employment

1975- 1976 Lab Assistant, Institute for Molecular Biology, University of Oregon
1978 Programmer, PEP Project, SLAC
1978 - 1979 Teaching Assistant, U.C. Berkeley
1979 - 1984 Research Assistant, Lawrence Berkeley Laboratory
Mark II collaboration
1985 - 1988 Research Associate, EFI, University of Chicago
CCFR Collaboration
1988 - 1990 Wilson Fellow, Fermi National Accelerator Laboratory
E665 Muon Scattering Collaboration
1990 - 1995 Assistant Professor, Dept. of Physics and Astronomy,
Northwestern University
E665 and D0 Collaborations

1995 - 2000 Associate Professor, Dept. of Physics and Astronomy,
Northwestern University
D0 and NuTeV Collaborations

1999-2000 Staff Scientist at Fermilab (leave of absence from Northwestern)

2000-2014 Professor, Dept. of Physics and Astronomy,
Northwestern University
CTEQ, D0, $g - 2$ and MINERvA Collaborations

2000-2002 Associate Chair, Department of Physics and Astronomy, Northwestern University

2004-2007 Associate Dean for Research and Graduate Studies
Weinberg College of Arts and Sciences, Northwestern University

2010-2014 Chair, Department of Physics and Astronomy, Northwestern University

2015-present Head, Department of Physics, Oregon State University

2019-present Joint Appointment with Fermilab Scientific Computing
MINERvA and DUNE Collaborations

Teaching, Advising and Other Assignments

Instructional Summary

Credit Courses

Course	Title	Term	Enrollment
Physics 314	Modern Physics	Fall 2015	28
Physics 607	Research Integrity	Winter 2016	8
Physics 607	Research Integrity	Winter 2017	10
Physics 495/595	Particle Physics	Spring 2017	23
Physics 607	Research Integrity	Winter 2018	6
Physics 607	Research Integrity	Winter 2019	11
Physics 495/595	Particle Physics	Spring 2019	17

Noncredit Courses and Workshops

- "Neutrino Oscillations" Lecture at the CTEQ summer School, Lake Geneva Wisconsin, WI, June 2000.
- Lectures on "Practical Collider Physics", TASI Summer School, Boulder Colorado, June 2004.
- "Practical Collider Physics", four lectures at "Prospects in Theoretical Physics", Institute for Advanced Study, Princeton NJ, July 2005.
- Lectures at the HUGS Summer School, Jefferson National Laboratory, June 2010.

Curriculum Development

At Northwestern

1994 - First use of web pages for classes

1997 - Developed a new sophomore level computational physics course

2001 - Developed a general science course for non-majors “Extra Dimensions”

2012 - Developed a multi-disciplinary course “Einstein and the 20th Century” with Mathew Grayson (EECS) and Peter Fenves (German and Comparative Literature)

At Oregon State

2016 - Updated the senior level Particle Physics course which had not been taught for several years.

2016 - Updated the graduate level research course to include research rotations. This has led to faster placement of students in research.

Graduate Students and Postdoctoral Trainees

Doctoral Students Supervised at Northwestern

Panagiotis Spentzouris, 1991-1994, Head Scientific Computing, Fermilab

Tacy Joffe-Minor, 1992-1997, Instructor, University of Arkansas

Tracy Taylor-Thomas, 1992-1997, Director of Program Management at Cloudability

Robert Snihur, 1994-2000, System Administrator, US-CMS project, University of Nebraska

Geralyn "Sam" Zeller, 1995-2002, Spokesperson MicroBooNE collaboration, Fermilab

Timothy Andeen, 2004-2008, Asst. Prof., U.T. Austin

Sahal Yacoob, 2005-2010, Lecturer, Univ. of Cape Town

Cheryl Patrick, 2010-2016, Postdoc, University College London

Doctoral Students Supervised at Oregon State

Amit Bashyal, 2015-

Maggie Greenwood, 2017-2019, MS degree

Sean Gilligan, 2018-

Noah Vaughan, 2019-

Jacob Capps, 2020-

Amit Bashyal recently won the group presentation prize at the International Neutrino Summer School.

Postdoctoral Fellows Supervised at Northwestern

Iain Bertram, 1997-2000, Professor, University of Lancaster
Lucyna de Barbaro, 1998-2001, Conservation Consultants, Pittsburgh
Harald Fox, 2000-2004, Senior Lecturer, University of Lancaster
Gregory Davis, 2004-2005, Research Staff, Institute for Defense Analyses
Jonathan Hays, 2005-2007, Senior Lecturer, Queen Mary College, London
Michael Kirby, 2007-2010, Scientist 1, Fermilab
Laura Fields, 2011-2015, Scientist 1, Fermilab
Leah Welty-Rieger, 2012-2014, GEANT4 Consultant, Chicago Area

Laura Fields recently won the Universities Research Association Early Career Scientist Award

Postdoctoral Fellows Supervised at Oregon State

Mateus Carneiro, 2016-2019, now Postdoc at Brookhaven National Lab

Team or Collaborative Efforts

I was the first woman to lead a major particle physics experiment in the US. I continue to take leadership roles in these large collaborative efforts. I list the leadership roles I have taken in scientific collaborations.

1987	Run coordinator, CCFR experiment
1991-1997	Spokesperson of Fermilab Experiment E665
1996-1998	D0 Collaboration QCD convener
2000	Co-leader Fermilab Neutrino Factory Physics Study
2000-2001	Co-leader D0 software and computing project
2007-2008	Chair, D0 Collaboration Institutional Board
2007-2009	D0 Collaboration Electroweak Convener
2008-2014	Computing Infrastructure Coordinator, MINERvA collaboration
2009-	D0 representative, Tevatron Electroweak Working Group (TEVEWWG)
2010-2012	Elected Member, D0 collaboration Advisory Council
2013-2016	Elected member, Minerva Executive Committee
2017-2018	Computing Coordinator for the DUNE collaboration
2018-2019	Member DUNE collaboration executive board
2018-present	Leader of the International DUNE Collaboration Computing Consortium

International Teaching

Instructor at *Taller de Altas Energias* in Benasque Spain, Sept. 4-9, 2016

Advising

Informal advising as Dept. Head.

Undergraduate Research advisor for: Evan Peters (BS Physics/Nuclear Engineering 2017), Gabriel Nowak (2018), Abraham Teklu (2018), Alex Gonzalez (2019), Kaseylin Yoke (2020)

Local research supervisor for Tymothy Mangan (BS Physics 2017)

Other Assignments

Dept. Head responsible for fostering research by faculty and students, scheduling courses, encouraging the development of new courses and evaluation of teaching by faculty and graduate teaching assistants.

I have added Learning Assistants in introductory courses, expanded tutoring hours to 50 hrs/week serving 500 students/week.

Scholarship and Creative Activity

Publications: Selected Papers

Co-Author on 674 publications with 52,079 citations (h-index 108 in the INSPIREHEP database). High Energy Physics lists all contributors on all papers so these numbers are larger than in other fields. I list the papers to which I made the most significant contributions below. The full list is available at <http://inspirehep.net>.

Since coming to OSU I have been a co-author on 42 publications.

- [1] N. Lockyer *et al.*, [Mark II Collaboration], “Measurement of the Lifetime of Bottom Hadrons,” *Phys. Rev. Lett.* **51**, 1316 (1983). doi:10.1103/PhysRevLett.51.1316. 335 citations counted in INSPIRE as of October 18, 2019.
- [2] W. K. Tung, J. G. Morfin, H. Schellman, S. Kunori, A. Caldwell, F. I. Olness, “Structure Functions and Parton Distributions,” in 4th DPF Summer Study on High-energy Physics in the 1990s, Snowmass, CO, USA, 27 Jun - 15 Jul 1988, pp.305-330. FERMILAB-CONF-89-026 This study led to the Morfin-Tung and CTEQ PDF sets.
- [3] M. R. Adams *et al.*, [E665 Collaboration], “Proton and deuteron structure functions in muon scattering at 470-GeV,” *Phys. Rev.* **D54**, 3006-3056 (1996). 335 citations counted in INSPIRE as of October 18, 2019.
- [4] B. Abbott *et al.* [D0 Collaboration], “Determination of the absolute jet energy scale in the D0 calorimeters,” *Nucl. Instrum. Meth. A* **424**, 352 (1999) doi:10.1016/S0168-9002(98)01368-0 [hep-ex/9805009]. 190 citations counted in INSPIRE as of October 18, 2019.
- [5] B. Abbott *et al.*, [D0 Collaboration], “The inclusive jet cross section in $\bar{p}p$ collisions at $\sqrt{s} = 1.8$ TeV,” *Phys. Rev. Lett.* **82**, 2451-2456 (1999). [hep-ex/9807018]. 124 citations counted in INSPIRE as of October 18, 2019.
- [6] C. Albright *et al.*, S. Geer and H. Schellman editors, “Physics at a Neutrino Factory,” FERMILAB-FN-0692. Aug 2000. 133 pp. arXiv:hep-ex/0008064 399 citations counted in INSPIRE as of 19 Oct 2019.

- [7] G. P. Zeller *et al.*, [NuTeV Collaboration], “A Precise determination of electroweak parameters in neutrino nucleon scattering,” *Phys. Rev. Lett.* **88**, 091802 (2002). [hep-ex/0110059]. 743 citations counted in INSPIRE as of 19 Oct 2019.
- [8] V. M. Abazov *et al.* [D0 Collaboration], “Measurement of the W Boson Mass with the D0 Detector,” *Phys. Rev. Lett.* **108**, 151804 (2012). [arXiv:1203.0293 [hep-ex]] 120 citations counted in INSPIRE as of 19 Oct 2019.
- [9] V. M. Abazov *et al.* [D0 Collaboration], “Measurement of $\sin^2 \theta_{\text{eff}}^{\ell}$ and Z -light quark couplings using the forward-backward charge asymmetry in $p\bar{p} \rightarrow Z/\gamma^* \rightarrow e^+e^-$ events with $\mathcal{L} = 5.0 \text{ fb}^{-1}$ at $\sqrt{s} = 1.96 \text{ TeV}$,” *Phys. Rev. D* **84**, 012007 (2011) [arXiv:1104.4590 [hep-ex]]. 63 citations counted in INSPIRE as of 19 Oct 2019.
- [10] L. Fields *et al.* [MINERvA Collaboration], “Measurement of Muon Antineutrino Quasi-Elastic Scattering on a Hydrocarbon Target at $E_{\nu} \sim 3.5 \text{ GeV}$,” *Phys. Rev. Lett.* **111**, 022501 (2013) [arXiv:1305.2234 [hep-ex]]. 184 citations counted in INSPIRE as of 19 Oct 2019.
- [11] T. A. Aaltonen *et al.* [CDF and D0 Collaborations], “Combination of CDF and D0 W -Boson Mass Measurements,” *Phys. Rev. D* **88**, 052018 (2013) [arXiv:1307.7627 [hep-ex]]. 90 citations counted in INSPIRE as of 19 Oct 2019.
- [12] A. V. Kotwal, H. Schellman and J. Sekaric, “Review of Physics Results from the Tevatron: Electroweak Physics,” *IJMPA*, **30**, 06 (2015). arXiv:1409.5163 [hep-ex]. 1 citations counted in INSPIRE as of 19 Oct 2019.
- [13] C. E. Patrick *et al.* [MINERvA Collaboration], “Measurement of the Muon Antineutrino Double-Differential Cross Section for Quasielastic-like Scattering on Hydrocarbon at $E_{\nu} \sim 3.5 \text{ GeV}$,” *Phys. Rev. D* **97**, no. 5, 052002 (2018) doi:10.1103/PhysRevD.97.052002 [arXiv:1801.01197 [hep-ex]]. 19 citations counted in INSPIRE as of 19 Oct 2019.
- [14] B. Abi *et al.* [DUNE Collaboration], “The DUNE Far Detector Interim Design Report Volume 1: Physics, Technology and Strategies,” arXiv:1807.10334 [physics.ins-det]. 47 citations as of Aug 2019.

Invited and Peer Selected Presentations

- ‘Strange and Vector Meson Production in e+e- Annihilation at 29 GeV’, Washington APS Meeting (March 1984)
- ‘Strange and Vector Meson Production in e+e- Annihilation at 29 GeV’, High Energy Physics seminar at Univ. of Pennsylvania, (Nov 1984)

- 'Strange and Vector Meson Production in e^+e^- Annihilation at 29 GeV', High Energy Physics seminar at Univ. of Chicago, (Nov 1984)
- 'Review of Neutrino Program at Fermilab', presentation to the Dept. of Energy, Fermilab (May 1986)
- 'Future results on Same Sign Dimuon Production in Neutrino-Nucleon Interactions', High Energy Physics seminar at Univ. of Chicago (May 1986)
- 'Same Sign Dimuon Production in Neutrino-Nucleon Interactions', High Energy Physics seminar at Univ. of Michigan (January 1987)
- 'Neutrino Production of Like-Sign Dimuons', Invited talk at Rencontres de Physique de la Vallée d' Aoste, La Thuile, Italy (March 1987) (Published in the Proceedings)
- 'Report on La Thuile Conference', High Energy Physics seminar at Fermilab (March 1987).
- 'Neutrino Production of Like Sign Dimuons', High Energy Physics seminar at Stanford Linear Accelerator Center (May 1987)
- 'Production of Muons in Hadronic Showers', High Energy Physics seminar at Univ. of Chicago (May 1988)
- Participated in the Parton Distributions group at Snowmass '88. (Published in Proceedings)
- 'Status of Parton Distributions', High Energy Physics seminar at Univ. of Chicago, (August 88)
- 'Neutrino Production of Charm at Fermilab E744', Invited talk at SLAC Summer School (August 1988) (Published in Proceedings)
- 'Proposal for E665 Tracking Upgrades', Presentation to Fermilab Program Advisory Committee, Fermilab (January 1989)
- 'Consumers Guide to Parton Distributions', High Energy Physics seminar at Univ. of Illinois (February 1989)
- 'The Quark Content of the Proton', High Energy Physics seminar at Northwestern (February 1990)
- 'Consumers Guide to Parton Distributions', Seminar for CDF collaboration at Fermilab (February 1990)

- 'DO Tracking upgrades', High Energy Physics seminar at University of Chicago, November 1990.
- 'DO Upgrade Proposal', presentation to the Fermilab Physics Advisory Committee, Fermilab, April 2, 1991.
- 'Preliminary Results from Fermilab E665 - Muon Scattering at Low X_{Bj}', invited seminar at the International Lepton-Photon Symposium, Geneva Switzerland, July 1991.
- 'How do we know what's in the proton?', Physics Department colloquium at the Department of Physics, University of Iowa, September 9th, 1991.
- 'Overview of Fermilab Fixed Target Experiments', presentation to the Universities Research Association, Fermilab, January 19th, 1992.
- 'How do we know what's in the proton?', Colloquium at the Department of Physics and Astronomy, Northwestern University, February 19th, 1992.
- 'Jets and QCD' High Energy Physics seminar at Argonne National Lab, Argonne Illinois, June 1992.
- 'How do we know what's in the proton?' Colloquium at the Department of Physics Rice University, Houston Texas, October 1992.
- 'Jets and QCD', High Energy Physics seminar at Northwestern University, November 24, 1992.
- 'Jets and QCD', High Energy Physics seminar at University of Maryland, December 2, 1992.
- 'Jets and QCD', High Energy Physics seminar at University of Wisconsin, December 7, 1992.
- 'How do we know what's in the proton?', Colloquium at the Department of Physics, University of Illinois-UC, February 18, 1993.
- 'E665 Jet measurements', seminar at DESY, Hamburg, Germany, April 5, 1993.
- 'Recent Results from FNAL E665', seminar at Freiburg; University, Germany, July 9, 1993.
- 'Recent Results from FNAL E665', seminar at CERN, Geneva, Switzerland, July 12, 1993.

- 'How do we know what's in the proton?', Colloquium at the Department of Physics and Astronomy, University of Oregon, November 18, 1993.
- 'Jets and QCD', seminar at Michigan State University, November 30, 1993.
- 'History of the Fermilab Neutrino Program', Fest in honor of R.R. Wilson, Fermilab, March 4, 1994.
- H. Schellman et al., Nuclear A dependence of Exclusive Vector Meson Production in Muon Scattering, FERMILAB-Conf-94/219-E, Presented at the XXIXth Rencontres de Moriond, QCD and High Energy Interactions, Meribel, Savoie, France, March 19-26, 1994.
- 'Structure Functions from FNAL E665', seminar at the Max-Planck-Institut für Physik, Munich, Germany, March 29, 1994.
- 'Recent Results from FNAL E665', seminar at University of Michigan, April 11, 1994.
- 'Results from Fermilab E665 - Structure Functions and Color Transparency', seminar at University of California, Santa Cruz, April 28, 1994.
- 'Where do Parton distributions come from?', academic lecture for 'University of D0', Fermilab, May 26, 1994.
- 'Results from Fermilab E665, Structure functions and diffraction, seminar at DESY, Hamburg, Germany, September 13, 1994.
- Invited Plenary talk at the Annual Meeting of the American Physical Society, April 1995.
- Invited Plenary talk at the Paris Workshop on Quantum Chromodynamics, April 1995.
- Invited talk at the Blois Conference on Strong Interaction Physics, June 1996.
- Lecture on Statistical Analysis of Data at the University of D0, July 1995.
- Colloquium at Illinois Institute of Technology, October 1995.
- Invited plenary talk at the Wisconsin Phenomenology Workshop, Madison Wisconsin, April, 1996
- Colloquium at Harvard University, April 15, 1996.
- Colloquium at Purdue University, September 26, 1996.

- Invited talk at the Workshop on Small-x Physics, Argonne National Laboratory, October 1, 1996.
- Seminar on Diffractive Production on Heavy Nuclei at University of Illinois, November 5, 1996.
- Organized a 4-day workshop on 'QCD at D0' at Michigan State University, December 1996.
- Invited talk at the Workshop on Deep Inelastic Scattering, Chicago, IL, April 1997.
- Summary of the Fermilab Research Program at the Fermilab annual User's meeting, July 1997.
- Invited Plenary talk *Review of QCD Experiment* at the 28th Lepton Photon Symposium in Hamburg, Germany, July 1997.
- Invited Plenary talk *Deep Inelastic Scattering at a Muon Collider Complex* Workshop on Physics at the First Muon Collider, Batavia IL, November 1997.
- Seminar on neutrino measurements of the Weinberg Angle, University of Michigan, November, 1998.
- Seminar on high energy jet production at the D0 experiment, Argonne National Laboratory, December, 1998.
- Parallel session talk at International Workshop on Deep Inelastic Scattering and QCD, Berlin, Germany, April 2000.
- Plenary summary talk at International Workshop on Deep Inelastic Scattering and QCD, Berlin, Germany, April 2000.
- H. Schellman, "Fermilab Neutrino Factory Physics Study", Plenary talk at 'MUMU99 Workshop', San Francisco, December 1999.
- H. Schellman "Status Report on D0 Reconstruction Farms", Parallel session talk at CHEP2000, Padova Italy, February 2000.
- H. Schellman *et al.*, "Neutrino beams from muon storage rings", Neutrino and Nucleon Decay Workshop, Irvine, California, March 2000.
- "Neutrino Factories" Seminar at University of Maryland, March 2000.
- "Neutrino Factories" Seminar at University of Illinois, April 2000.

- "Neutrino Factories" Plenary talk at Phenomenology 2000, Madison Wisconsin, April 2000.
- "Results of the Neutrino Factory Physics Study", presentation to the Fermilab Physics Advisory Committee, April 2000.
- "Neutrino Factories" Plenary talk at Neutrino 2000 conference, Sudbury Canada, June 2000.
- "Neutrino Oscillations" Lecture at the CTEQ summer School, Lake Geneva Wisconsin, WI, June 2000.
- "Neutrino Factories", colloquium at Stanford Linear Accelerator Center, June 2000.
- "Neutrino Factories", colloquium at University of Illinois, Chicago, Sept. 2000.
- "Neutrino Factories", Seminar at Enrico Fermi Institute, Univ. of Chicago, Feb. 2001.
- "A Computing Facility for Accelerator Development" $\gamma\gamma$ collider workshop, Fermilab, March 2001.
- "Structure Function Measurements at Neutrino Factories", presentation at Snowmass 2001 Workshop, Snowmass, Colorado.
- "Precision Measurements with Incoming and Outgoing Neutrinos", Colloquium, IIT February 2002.
- "Precision Measurements with Incoming and Outgoing Neutrinos", Colloquium, University of Manitoba, March 2002.
- "Precision Measurements with Incoming and Outgoing Neutrinos", Seminar, Michigan State University, May 2002.
- "Precision Measurements with Incoming and Outgoing Neutrinos", Colloquium, Jefferson National Laboratory, September 2002.
- "Precision Measurements with Incoming and Outgoing Neutrinos", Seminar, Institute for Nuclear Theory, University of Washington, November 2002.
- "Precision Measurements with Incoming and Outgoing Neutrinos", Seminar, Caltech, April 2003.
- "Run II - Are we there yet?", Invited Plenary talk at the Phenomenology Symposium, Madison Wisconsin, May 2003.

- Organized Workshop, "From Zero to Z-Zero", Fermilab, February 2004.
- Invited Conference Summary talk, 40th Rencontres de Moriond, La Thuile, Italy, March 2005. Princeton NJ, July 2005.
- "Electroweak constraints on QCD from the Tevatron", Joint CTEQ-JLAB meeting, Jefferson National Laboratory, Newport News VA, November 2005.
- Invited talk, "Electroweak and QCD Physics at the Tevatron" at the 2006 Aspen Winter Conference "Particle Physics at the Verge of Discovery", Aspen CO, February 2006.
- "D0 results on vector boson physics", CTEQ meeting, Dallas, TX, December 2006.
- Invited Talk at the Symposium Honoring Wu-Ki Tung, Michigan State University, May 2007.
- High Energy Physics seminar on Luminosity Measurements - University of Chicago, October 2007.
- Organized Workshop on Databases for MINER ν A at the Massachusetts College of Liberal Arts, November 2007.
- Invited talk to the Particle Physics Prioritization Panel, February 2008.
- Invited Plenary Talk on Tevatron Results at the Deep Inelastic Scattering Workshop, London, UK, April 2008.
- Talk on the MINER ν A experiment at the Deep Inelastic Scattering Workshop, London, UK, April 2008.
- Talk on the Project X proton upgrade at the Deep Inelastic Scattering Workshop, London, UK, April 2008.
- Seminar on Luminosity Measurements at Colliders at Manchester University, England, April 2008.
- Member, local organizing committee for the Linear Collider Workshop 2008, held in Chicago in November 2008.
- Chair, organizing committee for a workshop on computing for neutrino experiments held at Fermilab in March 2009.
- Talk, "Offline Computing for the MINERVA Neutrino Experiment", Conference on Computers in High Energy Physics, Prague, March 2009.

- Talk, “ ‘No daughter of mine is going to Caltech’ : experiences of a second generation woman scientist”, ADVANCE Talk at the University of Nebraska, Lincoln, April, 2009.
- Colloquium, ”Squeezing the Higgs”, University of Nebraska, Lincoln, April 2009.
- Seminar, ”Squeezing the Higgs”, Argonne National Laboratory, May 2009.
- Invited Plenary talk on “Electroweak Physics” at the American Physical Society Division of Particles and Fields, Detroit, July 2009.
- Member, local organizing committee for the Neutrino Summer School, held at Fermilab in July 2009.
- Colloquium, ”Squeezing the Higgs”, Louisville, September 2009.
- Organized CTEQ09 workshop at Northwestern, November 2009.
- Colloquium, ”From Zero to Z-Zero, Electroweak Physics on Many Scales”, Jefferson National Laboratory, December 2009.
- Two invited talks at the Deep Inelastic Scattering Workshop in Florence Italy, April 2010.
- Invited talk at the ”Precision Tests of the Standard Model: from Atomic Parity Violation to Parity-Violating Lepton Scattering” at the European Center for Theoretical Physics, November 2010.
- Invited talk at the Rencontres de Moriond, March 2011, declined.
- Invited talk at the Deep Inelastic Scattering Workshop in Newport News, Virginia, April 2011.
- Talk on diboson production at the International Conference on High Energy Physics, Melbourne, Australia, July 2012.
- Colloquium, “Twinkle, Twinkle, Little Loop”, Lucent Alcatel, Naperville, IL, September 2013.
- Colloquium, “Twinkle, Twinkle, Little Loop”, Notre Dame, December 2013.
- Colloquium, “Twinkle, Twinkle, Little Loop”, Oregon State University, April 2014.
- Talk on MINERvA CCQE results at the CTEQ Collaboration meeting, Northwestern University, May 2014.

- Talk on MINERvA CCQE results at the International Conference on High Energy Physics, Valencia, Spain, July 2014.
- Talk on LBNE Beam Optimization at the International Conference on High Energy Physics, Valencia, Spain, July 2014.
- Colloquium, “Neutrino Nus”, Oregon State University, May, 2015.
- Neutrinos: Past, Present, Future, Frank Merritt Festschrift, University of Chicago, May 2015.
- Colloquium, “Neutrino Nus”, University of Oregon, May, 2015.
- Colloquium, “Neutrino Nus”, University of Valencia, Spain, May 2016.
- Invited Talk “ Neutrino Nus”, Northwest Section meeting of the American Physical Society, Penticton, BC, Canada, May 2016.
- Talk ”Measurement of the anti-neutrino CCQE cross section with the MINERvA experiment”, APS Division of Nuclear Physics Meeting, Vancouver, BC, Oct. 2016.
- Colloquium, “Particle Physics”, Linn-Benton Community College, February 2017.
- Colloquium, “Neutrino Nus”, Colorado State University, April 2017.
- Invited talk summarizing ”Fixed Target Physics” at the Fermilab 50th Anniversary Symposium, June 2017.
- Talk ”Measurement of the anti-neutrino CCQE cross section with the MINERvA experiment” at the Northwest Section meeting of the American Physical Society, Tacoma, WA, June 2018.
- Talk ”Measurement of the anti-neutrino CCQE cross section with the MINERvA experiment” at the International Conference on High Energy Physics, Seoul, South Korea, July 2018.
- Talk ”The LBNF Beamline”, at the International Conference on High Energy Physics, Seoul, South Korea, July 2018.
- Invited Talk at Symposium in honor of Hugh Montgomery, Jefferson Lab, Newport News, VA, August 2018.
- Invited Plenary talk at Computers in High Energy Physics, Adelaide, Australia, Nov, 2020.

Patent Awards/Inventions

N/A

Service

Department Service

Department Head - 2015-present

College Service

Associate Dean for Administration search committee 2015-2016 (Chair)

Member of Graduate program review of the Dept. of Food Science at Oregon State

To the profession

1993-1995	Member, Fermilab User's Executive Committee
1996-1998	Member, APS Division of Particles and Fields Executive Committee
1996-1999	Member, Dept. of Energy High Energy Physics Advisory Panel
1997-2000	Member, Outstanding Dissertation Committee, URA
1998	Member, Director Search Committee, Fermilab
1998	Member, Dean Search Committee, College of Arts and Sciences, Northwestern
1998-2001	Member, Large Hadron Collider Council, European Center for Nuclear Research (CERN)
2000	Co-leader Fermilab Neutrino Factory Physics Study
2001	Member, Dean Search Committee, College of Arts and Sciences, Northwestern
2001-2005	Member, Fermilab Program Advisory Committee
2001-2002	Chair, APS Division of Particles and Fields Nominating Committee
2003-2006	Member, Outstanding Postdoctoral Fellow Award Committee, Universities Research Association
2003	Member, Tanaka Dissertation Award Committee, APS
2005-2007	Member, DOE/NSF Neutrino Scientific Advisory Group (NUSAG)
2005-2012	Member of the Board, Fermilab Research Association
2008-2012	Chair, FRA Visiting Scholars Selection Committee
2010-2013	Sanford Underground Research Facility Program Advisory Committee
2010	Co-leader for Strategic Partnerships in development of the NU Strategic Plan
2011	Member, APS Primakoff Prize Committee
2012-2014	Member and Secretary, C11 Committee (Particle Physics) International Union for Pure and Applied Physics
2013	Fermilab Deputy Director Search Committee
2014	Review of the Physics Department at University of Nebraska, Lincoln
2014-2018	Jefferson Laboratory Program Advisory Committee
2015	Brookhaven Laboratory Nuclear and Particle Physics Program Advisory Committee
2015	Member, NSF/DOE Nuclear Science Long Range Planning Working Group
2015-present	CERN Scientific Policy Committee
2015-2017	Member and Vice Chair, C11 Commission(Particle Physics) International Union for Pure and Applied Physics
2016	External review of the Dept. of Physics at the University of Kansas
2017	External review of the Dept. of Physics at Utah State University
2018-2020	Chair, C11 Commission International Union for Pure and Applied Physics
2018-2020	Member (ex-officio), International Committee on Future Accelerators
2018	External review of the Dept. of Physics at the University of Pittsburgh
2018-2021	Cottrell Scholar Selection Committee
2018-2020	Member, International Neutrino Panel

I also serve as an external reviewer for the University of Lund (Sweden) and for the Swiss

and German national research councils.

Service to the Public

Helped physics students start the Astronomy Club which now has over 50 members.

Worked with the Astronomy Club and physics dept. on Eclipse outreach. Distributed eclipse glasses and information through schools, libraries and food banks.

Non-professionally related

None in Corvallis - was historian for the Wayne Illinois Countryside Garden Club until 2014.

Awards

National and International

- 1988 Robert Rathbun Wilson Fellowship,
Fermi National Accelerator Center
- 1991 Department of Energy Outstanding Junior Investigator Award
- 1993 A.P. Sloan Fellowship
- 1997 Associated Student Government Faculty Honor Roll
- 2000 Elected Fellow of the American Physical Society
- 2000 Fermilab Employee Recognition Award
- 2015 APS Division of Particles and Fields Mentoring Award
- 2017 Distinguished Referee, European Physical Journal
- 2019 European Physical Society High Energy and Particle Physics Prize
(with 1,000 members of the D0 and CDF Collaborations)

State and Regional

University and Community

Undergraduate Advisees

Evan Peters (BS Physics/Nuclear Engineering 2017), Gabriel Nowak (2018), Abraham Teklu (2018), Alex Gonzalez (2019), Kaseylin Yoke (2021)

Graduate Advisees

Panagiotis Spentzouris (Fermilab, Head, Head Quantum Science Program), Tacy Joffe-Minor (Univ. of Arkansas, Teaching Assistant Professor) , Tracy Taylor Thomas (Cloudability, Portland, OR, Director of Program Management), Robert Snihur (Univ. of Nebraska, CMS

Computing), GERALYN “Sam” Zeller (Fermilab, MicroBooNE spokesperson and Neutrino Department Head), Tim Andeen (U.T. Austin, Assistant Professor, ATLAS), Gabriel Juarez (co-advised, Assistant Professor, UIUC Mechanical Engineering), Sahal Yacoob (Senior Lecturer, Univ. of Cape Town, SA, ATLAS) and Cheryl Patrick (Postdoc, University College London, SuperNEMO), Amit Bashyal (current, MINERvA/DUNE), Sean Gilligan (current, MINERvA), Noah Vaughan (current, MINERvA).

Postdoctoral Advisees

Iain Bertram (Lancaster Univ., Professor, ATLAS), Lucyna de Barbaro (Lucent/Alcatel, Technical Specialist), Harald Fox (Lancaster, Senior Lecturer, ATLAS), Jonathan Hays (Queen Mary College, Lecturer, CMS), Gregory Davis (Research Staff, IDA), Michael Kirby (Fermilab, Scientist 1, MicroBoone), Laura Fields (Fermilab, Scientist 1, MINERvA/DUNE), Leah Welty-Rieger (Fermilab, GEANT consultant, $g - 2$), Mateus Fernandes Carneiro da Silva (BNL, Research Associate).

Professional Biography

Since receiving her doctorate in 1984, Heidi Schellman’s research has focused on measurements of proton structure and electroweak parameters. After three years at the University of Chicago as a member of the CCFR neutrino scattering experiment, she joined the E665 muon scattering experiment as a Wilson Fellow at Fermilab. She led an effort to build a precision vertex drift chamber capable of running in the muon beam which led to a factor of 5 improvement in the angular and momentum resolution of the experiment and precision measurements of the proton and deuteron structure functions at very low scattering angles. She was elected scientific spokesperson for the E665 collaboration in 1991 and served until the collaboration disbanded in the late 1990’s.

She joined the faculty at Northwestern University in 1990 and, at the same time, joined the D0 proton-antiproton collider experiment at Fermilab. Her main research interest on D0 has been the measurement of QCD and electroweak parameters at very high momentum transfer and their relation to lower energy measurements. She served as QCD Analysis convener from 1996 to 1998, as the Software and Computing Coordinator in 2000-2001, as D0 luminosity convener from 2002-2004, as Institutional board Chair in 2007-2008 and as Electroweak Physics group convener from 2007-2009. Her recent work is on the production and decay of the W and Z bosons, including the most precise measurement the mass of the W boson and a recent measurement of the Weinberg angle via parity violation in Z boson production and decay.

She also rejoined the NuTeV collaboration in 1995 in order to measure electroweak parameters with neutrino beams. GERALYN Zeller received the Tanaka Dissertation prize in 2003 for her doctoral work under Schellman’s supervision. Schellman is now a member of the MINERvA neutrino cross section experiment which recently published new results on

quasi-elastic anti-neutrino scattering.

In addition to her experimental work she has been a long-term participant in joint experimental-theoretical work on parton distributions, as a member of the original working group that led to the Morfin-Tung parton distribution sets in the late 1980's and more recently through membership in the CTEQ collaboration. Her main work has been in standardization of the presentation of experimental results to allow precision fits to data from multiple experiments.

In addition to her work on QCD and Electroweak Physics Schellman has served as consultant on technical issues related to high energy physics and computing for the U.S. Department of Energy (High Energy Physics Advisory Panel and Neutrino Scientific Advisory Group) and at CERN in Switzerland.

At Northwestern, she taught both undergraduate and graduate students and has originated four courses. A data analysis and programming course for sophomores intended to prepare students for research in their junior and senior years, Qualifying Boot Camp, a course for graduate students in which provides rigorous preparation for the Departmental Qualifying exam and a new course on Research Conduct. These courses has been highly successful with students from underrepresented groups who have gone on to successful careers in academia. In 2013 she teamed with a professor of German and a professor of Electrical Engineering on a Humanities course 'Einstein in the 20th Century' for non-scientists.

She has served as Associate Dean for Research in the Weinberg College of Arts and Sciences then as Chair of the Department of Physics and Astronomy at Northwestern. As Associate Dean, she was able to reconfigure funding packages to increase guaranteed support for graduate students in the Humanities and Social Sciences from four to five years. One of her major projects as Chair was improvements in support for students in the Introductory Physics courses, through the introduction of smaller course sections and drop-in tutoring.

She moved to Oregon State University in January 2015 as Head of the Department of Physics. As Head she has increased the outreach activities of the Department and encouraged initiatives to recruit and retain students across the Physics curriculum. This includes expansion of peer instruction in introductory courses, experiential astrophysics courses for beginning majors, a redesign of the sophomore major courses and support for the thriving Society for Physics Students. Her main role has been in finding resources and championing the creative initiatives of faculty. Her research efforts are concentrated on quasi-elastic anti-neutrino scattering and building the computing infrastructure for the protoDUNE and DUNE experiments running at CERN and Fermilab. She serves as Chair for Commission C11 (Particles and Fields) of the International Union for Pure and Applied Physics.