CURRICULUM VITAE

Henry Jonathan Frisch

Personal:

Born:	August 21, 1944 – Los Alamos, New Mexico
Married:	Priscilla Chapman Frisch, March 19, 1969
Children:	Sarah Tenaya, born February 14, 1974
	Geneviève Alexandra, born November 29, 1977

Education:

B.A., Harvard, 1966 (Physics) Ph.D., Berkeley, 1971 (Physics)

Employment:

Instructor of Physics, The University of Chicago, 1971-73 Assistant Professor of Physics, The University of Chicago, 1973-77 Associate Professor of Physics, The University of Chicago, 1977-84 Professor of Physics, The University of Chicago, 1984-present Joint Appointment, High Energy Physics Division, ANL, 2009-2011

Honors:

Harvard College Scholarship, 1962-63 and 1965-66 Leeds and Northrop Foundation, Predoctoral Fellow, 1966-67 Fellow, American Physical Society, 1986 Quantrell Award for Excellence in Teaching, University of Chicago, 1992 University of Chicago Provost's Teaching Award 2006-7

HEP/Physics Committees and Service:

High Energy Physics Advisory Panel (HEPAP), 1974-77 1974 HEPAP Woods Hole Subpanel on New Facilities 1975 HEPAP Woods Hole Subpanel on New Facilities 1977 HEPAP Woods Hole Subpanel on New Facilities Executive Committee of the Division of Particles and Fields, APS, 1979-82 Executive Committee of the Users Organization, Fermilab, 1979-81 Co-Chair, 1979 Gordon Conference on Elementary Particle Interactions SLAC Experimental Program Advisory Committee, 1987-89 Argonne High Energy Physics Division Review Committee, 1987-89 1989 HEPAP Subpanel: "HEP and SSC Over the Next Decade" Chair, Nominating Committee, Division of Particles and Fields, APS, 1992 Divisional Councilor, Division of Particles and Fields, APS, 1/95-12/98 Panofsky Prize Committee, American Physical Society, 1994-95 Committee on the International Freedom of Scientists, 1996-1998 Vice-Chair, Board of the Bulletin of the Atomic Scientists, 2003-2005 Tanaka Prize Committee, American Physical Society, 2005 Board of the Bulletin of the Atomic Scientists, 2002-2008 Associate Divisional Editor, Physical Review Letters, Nov. 1, 2010– Oct. 31, 2013

Conference Advisory and Organizing Committees (recent entries only):
Co-Chair: 1999 ASPEN Winter Conference on Particle Physics, January 17-23, 1999
Advisory Panel: PASCOS99, 7th International Symposium on Particles, Strings and Cosmology,
Granlibakken, Lake Tahoe, California, December 10-16, 1999
Program Committee: VIETNAM 2000 – July 19-24, Hanoi, Vietnam
International Advisory Committee: SUSY2K, 8th International Conference on
Supersymmetries in Physics, June 26-July 1, 2000, CERN, Geneva, Switzerland
Organizing Committee: From the Smallest to the Largest Distances,
Institute of Theoretical and Experimental Physics, Moscow, Russia, May 24-26, 2001
International Organizing Committee: Borders and Frontiers In Physics, October 4-5 2002,
"College de France", Paris;
International Advisory Committee: 2002 Aspen Winter Conference on Particle Physics
Current and Upcoming Discoveries, February 3-9, Aspen Colorado
International Advisory Committee: The 10th International Conference on Supersymmetry and
Unification of Fundamental Interactions; DESY in Hamburg (Germany), June 17-23, 2002;
Organizing Committee: XXXXth Rencontres de Moriond – Electroweak Interactions and
Unified Theories, March 5-12, 2005, La Thuile, Italy
Program Committee: Hadron Collider Symposium, July 4-9, 2005, Les Diablerets, Switz.
Organizing Committee: Pico-Sec Timing Hardware Workshop; Chicago, IL, USA; 18 November, 2005
Organizing Committee: XXXXIth Rencontres de Moriond – Electroweak Interactions and
Unified Theories, March 18-25, 2006, La Thuile, Italy
Organizing Committee: XXXXIIth Rencontres de Moriond – Electroweak Interactions and
Unified Theories, March 10-17, 2007, La Thuile, Italy
Organizing Committee: Pico-Sec Simulation Workshop; Chicago, IL, USA; 12 December, 2006
Organizing Committee: Aspen Winter Conference,
"New Physics at the Electroweak Scale and New Signals at Hadron Colliders", Jan. 8-13, 2007
Organizing Committee: Workshop on Timing Detectors, March 8-9, 2007, Saclay, Ormes les Messiers, France
Organizing Committee: XXXXIIIth Rencontres de Moriond – Electroweak Interactions and
Unified Theories, March 1-8, 2008, La Thuile, Italy
Organizing Committee: Workshop on Psec Timing, Chicago, IL, USA; March 17-18, 2008
Organizing Committee:Workshop on Timing Detectors: Medical And
Particle Physics Applications; Institute of Nuclear Physics in Lyon
(IPNL), France; 15-16 October, 2008
Organizing Committee:Photo-Detectors in Water Cherenkov Neutrino
Detectors; Workshop, Argonne National Laboratory, Lemont, IL; 20 December 2008
Organizing Committee: First Workshop on Photocathodes: 300nm-500nm,
Univ. of Chicago, Chicago, IL; 20-21 July 2009
Organizing Committee: The Development of Large Area Psec
Photo-Devices; Workshop VII, Argonne National Laboratory, Lemont, IL;
26-27 February 2009
Organizing Committee: Workshop on Electronics and DAQ for Timing
Detectors in Medical and Particle Physics, Clermont-Ferrand, France;
28-29 January 2010 Organizing Committee: Technology and Instrumentation in
Organizing Committee: recinology and instrumentation in

Particle Physics (TIPP2011), Chicago IL, June 9 - 14, 2011.

University Service:

College Council, University of Chicago, 1976-77 Governing Committee of the Physical Sciences Collegiate Division, 1976-77 Committee of the College Council, University of Chicago, 1976-77 College Council, University of Chicago, 1988-89 Governing Committee of the Physical Sciences Collegiate Division, 1991-93 Policy Committee, Physical Sciences Division, University of Chicago, 1992 Ad Hoc Committee on International Affairs, 2001 Board of the Graham School, 2001-2002 Chair, Board of the Graham School, 2002-3 Chair, Committee for the Center for Elementary Math and Science Education, 2002-Council of the University Senate 2002-2005 Committee of the Council of the University Senate 2003-2005 Spokesperson of the Committee of the Council of the University Senate 2004-2005 Presidential Search Committee 2005-2006

Science Education:

Co-Founder (with P. Frisch) Believe in the Public Schools, a parents organization which participated in ending the 1989 teachers strike.
Co-Founder (with P. Frisch, L. Lederman, and G. Berry) of the Chicago Education Federation (CEF: a not-for-profit consortium of 13 universities and colleges in Chicago)
Co-Founder of the Teachers Academy for Mathematics and Science (TAMS, a project of CEF)
Steering Committee of TAMS, 1989
Co-Chair Program Committee, TAMS, 1991-1998
Program Committee, TAMS, 1998-2003
Member of Board, TAMS, 1991-2003
Chair, Advisory Committee, Center for Secondary Science and Math Education, Univ. of Chicago, 2003-2004
Advisory Committee, Center for Secondary Science and Math Education, 2003-present

Publications

Additional links to Papers, Talks, CDF Notes, and Essays are available at my web page: http://hep.uchicago.edu/~frisch and in the Psec Document Library: http://lappddocs.uchicago.edu

1 Primary Publications:

Refereed (with a couple of recent exceptions for history and proceedings) papers for which I was a primary author.

- 114. Jinseo Park, Fangjian Wu, Evan Angelico, Henry J. Frisch, Eric Spieglan; Patterned anodes with submillimeter spatial resolution for large-area MCP-based photodetector systems Nuclear Inst. and Methods in Physics Research, A 985 (2021) 164702; 22 Sept, 2020
- 113. E. Angelico, A. Elagin, H. J. Frisch, E. Spieglan, B. W. Adams, M. R. Foley, and M. J. Minot; "Air-transfer production method for large-area picosecond photodetectors; Review of Scientific Instruments 91, no. 5 (2020): 053105; 28 April 2020
- 112. E Angelico, A Elagin, HJ Frisch, M Wetstein; Measuring the Neutrino Event Time in Liquid Argon by a Post-Reconstruction One-parameter Fit Whitepaper submitted to Snowmass2021, https://snowmass21.org/submissions/nf arXiv preprint 2004.00580 1 April, 2020
- 111. H. J. Frisch; Adding Stroboscopic Muon Information For Reduction of Systematic Uncertainties in DUNE; PSEC Document Library No. 343; http://lappddocs.uchicago.edu/

- 110. E. Angelico, J. Eisch, A. Elagin, H.J. Frisch, S. Nagaitsev, and M. Wetstein; Energy and Flavor Discrimination Using Precision Time Structure in On-Axis Neutrino Beams; Phys. Rev. D, 100, 032008. 26 Aug 2019.
- 109. H. J. Frisch; Drifting Photons on Optical Paths, Mirrors, Sub-mm Resolution in Four Dimensions, and Transverse/Longitudinal Phase Space: Exploiting Psec Time Resolution. Proceedings of the 5th International Conference on Micro-Pattern Gas Detectors (MPGD2017); 22-26 May, 2017, Philadelphia, USA; Proceedings in Science, 2018x
- 108. H. J. Frisch Pisa and the Collider Detector at Fermilab: a History of the Establishment of Precision Physics With a Calorimetric Spectrometer at a Hadron Collider. Proceedings of Fisica e fisici a Pisa nel Novecento, November, 2017; Pisa University Press, 01/2019. ISBN 978-883339-0888
- 107. H. J. Frisch, B. W. Adams, et al.; A Brief Technical History of the Large-Area Picosecond Photodetector (LAPPD) Collaboration Mar. 2016 (Unpublished) arXiv:1603.01843

106. H.J. Frisch;

Drifting Photons on Optical Paths, Mirrors, Sub-mm Resolution in Four Dimensions, and Transverse/Longitudinal Phase Space: Exploiting Psec Time Resolution Proceedings of the 5th International Conference on Micro-Pattern Gas Detectors (MPGD2017); 22-26 May, 2017, Philadelphia, USA; Proceedings in Science, 2018

- 105. M. Gaowei, Z. Ding, S. Schubert, H. B. Bhandari, J. Sinsheimer, J. Kuehn, V. V. Nagarkar, M. S. J. Marshall, J. Walsh, E. M. Muller, K. Attenkofer, H. J. Frisch, H. Padmore, and J. Smedley; Synthesis and X-ray characterization of sputtered bi-alkali antimonide photocathodes APL Materials 5, 116104 (2017); https://doi.org/10.1063/1.5010950; (My contributions are not up to the intellectual or technical level of the rest of this group.)
- 104. A. Elagin, H. J. Frisch, B. Naranjo, J. Ouellet, L. Winslow, T. Wongjirad; Separating Double-Beta Decay Events from Solar Neutrino Interactions in a Kiloton-Scale Liquid Scintillator Detector By Fast Timing; Nucl. Inst. Meth. Phys. Res. A849, 102 (Mar. 2017)
- 103. E. Angelico, T. Seiss, B. W. Adams, A. Elagin, H. J. Frisch, E. Spieglan; Capacitively coupled pickup in MCP-based photo-detectors using a conductive, metallic anode; Nucl. Inst. Meth. Phys. Res. A. (Oct. 2016)
- 102. A. Elagin, H. J. Frisch, B. Naranjo, J. Ouellet, L. Winslow, T. Wongjirad; Separating Double-Beta Decay Events from Solar Neutrino Interactions in a Kiloton-Scale Liquid Scintillator Detector By Fast Timing; Nucl. Inst. Meth. Phys. Res. A. (Sept. 2016)
- 101. E. Oberla and H.J. Frisch; Charged particle tracking in a water Cherenkov optical time-projection chamber; Nucl. Inst. Meth. Phys. Res. A. Volume 814, 19-32, (April 2016)
- 100. B.W. Adams, A. Elagin, H. Frisch, R. Obaid, E. Oberla, A. Vostrikov, R. Wagner, J. Wang, M. Wetstein; *Timing Characteristics of Large Area Picosecond Photodetectors*; Nucl. Inst. Meth. Phys. Res. A., Vol. 795, pp 1-11 (Sept. 2015)
- 99. B. W. Adams, A. Elagin, J. W. Elam, H. J. Frisch, J.-F. Genat, J. S. Gregar, A. U. Mane, M. J. Minot, R. Northrop, R. Obaid, E. Oberla, A. Vostrikov, M. Wetstein; An Internal ALD-Based High Voltage Divider and Signal Circuit for MCP-based Photodetectors; Nucl. Instr. Meth. Phys. Res. A; Vol. 780, 107-113 (April 2015)
- 98. C. Aberle, A. Elagin, H.J. Frisch, M. Wetstein, L. Winslow; Measuring Directionality in Double-Beta Decay and Neutrino Interactions with Kiloton-Scale Scintillation Detectors; JINST Vol. 9 P06012 doi:10.1088/1748-0221/9/06/P06012 (2014)

- 97. E. Oberla, J.-F. Genat, H. Grabas, H. Frisch, K. Nishimura, and G Varner; A 15 GSa/s, 1.5 GHz Bandwidth Waveform Digitizing ASIC; Nucl. Instr. Meth. A735, p452; (Jan 2014)
- 96. H. Grabas, R. Obaid, E. Oberla, H. Frisch J.-F. Genat, R. Northrop, F. Tang, D. McGinnis, B. Adams, and M. Wetstein; *RF Strip-line Anodes for Psec Large-area MCP-based Photodetectors*; Nucl. Instr. Meth. A71, pp124-131, (May 2013)
- 95. A. Ronzhin and H. J. Frisch; Use of Flat Panel Microchannel Plates in Sampling Calorimeters with Timing; White Paper submitted to Snowmass 2013
- 94. with S. Wilbur (Ph.D thesis paper), D. Krop, C. Grosso-Pilcher and the CDF Collaboration; Search for Light New Particles via Signatures with Soft Leptons in Electroweak Final States, Phys. Rev D 85, 092001 (2012)
- 93. H. Grabas, R. Obaid, E. Oberla, H. J. Frisch J.-F. Genat, R. Northrop, F. Tang, D. McGinnis, B. Adams, and M. Wetstein; *RF Strip-Line Anodes for Psec Large-Area MCP-based Photodetectors*; Nucl. Instr. Meth. A71, pp124-131, (2013)
- 92. with B. Auerbach (Ph.D thesis paper), A. Loginov, I. Shreyber, P. Tipton and the CDF Collaboration; Evidence for tīγ Production and Measurement of σ_{tīγ}/σ_{tī}, Phys. Rev. D84, 031104(R) (Aug. 2011)
- 91. A. Paramonov, H. J. Frisch, F. Canelli, M. D'Onofrio, and S. Mrenna; Present Limits on the Precision of SM Predictions for Jet Energies, Nucl. Instrum. Meth. A622 (June 2010)
- 90. with A. Paramonov (Ph.D thesis paper) and the CDF Collaboration; Search for the Neutral Current Top Quark Decay t → Zc Using Ratios of Z+4 Jets to W+4 Jets Production; Phys. Rev. D80, 052001 (Aug 2009);
- with I. Shreyber(Ph.D thesis paper), A. Loginov, and the CDF Collaboration; Search for Anomalous Production of Events with a Photon, Jet, b-quark Jet, and Missing Transverse Energy, Physical Review D, Vol.80, No.1; (July 2009)
- H. J. Frisch, J.-F. Genat, G. Varner, and F. Tang; *Pico-second Resolution Timing Measurements*; Nucl.Instrum.Meth. A607 387-393 (2009)
- 87. A. Abulencia et al. (the CDF Run II Collaboration); Search for New Physics in Lepton + Photon + X Events with 929 pb⁻¹ of ppbar Collisions at $\sqrt{s} = 1.96 TeV$ Phys. Rev. D **75**, 112001 (2007)
- 86. with A. Loginov (Ph.D thesis paper) and the CDF Collaboration; Search for New Physics in Photon-Lepton+X Events with 305 pb⁻¹ of p̄p Collisions at √s = 1.96 TeV; Phys. Rev. Lett. 97:031801 (2006)
- 85. M. Goncharov, T. Kamon, V. Khotilovich, V. Krutelyov, S.W. Lee, D. Toback, P. Wagner, H. Frisch, H. Sanders, M. Cordelli, F. Happacher, S. Miscetti, R. Wagner; *The Timing System for the CDF Electromagnetic Calorimeters*; Nucl.Instrum.Meth.A565:538-542 (2006)
- 84. D. Acosta et al., the CDF Run II Collaboration); Search for Anomalous Production of Diphoton Events With Missing Transverse Energy at CDF and Limits on Gauge-mediated Supersymmetry-breaking Models; Phys. Rev. D 71, 031104 (2005)

- M. Bogdan, H. Frisch, M. Heintz, A. Paramonov, H. Sanders, S. Chappa, R. DeMaat, R. Klein, T. Miao, P. Wilson, T. J. Phillips; A 96-channel FPGA-based Time-to-Digital Converter; Nucl. Instrum. Meth. A 554, 444 (2005)
- 82. E. Abouzaid and H. J. Frisch The Ratio of W + N jets To Z⁰/γ* + N jets Versus N As a Precision Test of the Standard Model; Phys. Rev. D 68, 033014 (2003)
- 81. with J. Berryhill (Ph.D thesis paper) and the CDF Collaboration; Search for New Physics in Photon-Lepton Events in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV; Phys. Rev. Lett. **89**, 041802 (2002)
- 80. with P. Onyisi (undergraduate Apker awardee) and the CDF Collaboration;
 Limits on Extra Dimensions and New Particle Production in the Photon and Missing Energy Signature in pp̄ Collisions at roots = 1.8 TeV at CDF;
 Phys. Rev. Lett.89(2002) 281801
- 79. with D.Toback and C. Battle and the CDF Collaboration;
 Search for New Heavy Particles in the WZ Final State in Proton Anti-Proton Collisions at √s = 1.8 TeV;
 Phys. Rev. Lett. 88(2002) 071806
- 78. with R. Culbertson and the CDF Collaboration; Searches for New Physics in Events with a Photon and b-quark Jet at CDF; Phys. Rev. D65 (2002) 052006
- 77. Search for Narrow Diphoton Resonances and for $\gamma\gamma + W/Z$ Signatures in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV; (with A. Castro, P. Wilson, and T. Affolder, et al.; CDF collaboration) Phys. Rev. **D64** (2001) 092002.
- 76. Search for the W' Boson via the Decay Mode $W' \rightarrow \mu\nu_{\mu}$ in 1.8 TeV *pbarp* Collisions, (with F. Abe, *et al.*) Phys. Rev. Lett. **84**, 5716 (2000)
- 75. Direct Measurement of the W Boson Width in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV; The CDF Collaboration with T. Affolder et al.) Phys. Rev. Lett. 85, 3347 (2000)
- 74. Search for the Charged Higgs Boson in the Decays of Top Quark Pairs in the e τ and $\mu\tau$ Channels at \sqrt{s} = 1.8 TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D62**, 12004 (2000)
- 73. Searches for New Physics in Diphoton Events in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D59**, 092002 (1999)
- 72. Search for a Technicolor Ω_T Particle in Events with a Photon and a B Quark Jet at Fermilab, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 83, 3124-3129 (1999)
- Measurement of the Top Quark Mass with the Collider Detector at Fermilab, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 82, 271-276 (1999), Erratum-ibid. 82, 2808-2809 (1999)
- 70. Search for Higgs Bosons Produced in Association with a Vector Boson in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **81**, 5748-5753 (1998)
- M. Carena, R.L. Culbertson, S. Eno, H.J. Frisch, and S. Mrenna; *The Search for Supersymmetry at the Tevatron Collider*; Rev.Mod.Phys.71:937-981,1999
- 68. The Search for Supersymmetry at the Tevatron Collider, (with M. Carena, (Fermilab), R.L. Culbertson (UC), S. Eno (Maryland), and S. Mrenna (ANL)); in "Perspectives in Supersymmetry," edited by G.L. Kane. World Scientific (Jul 1998); ISBN: 978-981-02-3553-6
- 67. Searches for New Physics in Diphoton Events in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **81**, 1791-1796 (1998)
- 66. Measurement of the Top Quark Mass and $t\bar{t}$ Production Cross-Section from Dilepton Events at the Collider Detector at Fermilab, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **80**, 2779 (1998)

- Measurement of the Top Quark Mass, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 80, 2767 (1998)
- 64. Measurement of the $t\bar{t}$ Production Cross-Section in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 80, 2773 (1998)
- 63. Search for First Generation Leptoquark Pair Production in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 4327 (1997)
- 62. Search for New Particles Decaying into $B\bar{B}$ Produced in Association with W Bosons Decaying into E_{η} or μ_{η} at the Tevatron, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 3819 (1997)
- 61. The $\mu\tau$ and $e\tau$ Decays of Top Quark Pairs Produced in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with M. Hohlmann,⁰ F. Abe et al.), Phys. Rev. Lett. **79**, 3585 (1997)
- 60. Forward-Backward Charge Asymmetry of Electron Pairs Above the Z⁰ Pole, The CDF Collaboration (with Jeff Berryhill,⁰ F. Abe et al.), Phys. Rev. Lett. **77**, 2616 (1996)
- 59. Measurement of $\sigma B(W \to e\nu)$ and $\sigma B(Z^0 \to e^+e^-)$ in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with S. Kopp,⁰ F. Abe et al.), Phys. Rev. Lett. **76**, 3070 (1996)
- 58. Measurement of the Ratio $\sigma B(\bar{p}p \to W \to e\nu)/\sigma B(\bar{p}p \to Z^0 \to ee)$ in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with S. Kopp,⁰ F. Abe et al.), Phys. Rev. **D52**, 2624 (1995)
- 57. Measurement of the W Boson Mass, The CDF Collaboration (with D. Saltzberg,⁰ F. Abe et al.), Phys. Rev. Lett. **75**, 11 (1995).
- Measurement of the W Boson Mass, The CDF Collaboration (with D. Saltzberg,⁰ F. Abe et al.), Phys. Rev. D52, 4784 (1995).
- 55. Search for Charged Bosons Heavier than the W Boson in $\bar{p}p$ Collisions at $\sqrt{s} = 1800$ GeV, The CDF Collaboration (with S. Kopp,⁰ F. Abe et al.), Phys. Rev. Lett. **74**, 2900 (1995).
- 54. Observation of Top Quark Production in $\bar{p}p$ Collisions with the Collider Detector at Fermilab, The CDF Collaboration (with J. Romano,⁰ F. Abe et al.), Phys. Rev. Lett. **74**, 2626 (1995).
- 53. Search for New Gauge Bosons Decaying into Dielectrons in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D51**, R949 (1995).
- Direct Measurement of the W Boson Width, The CDF Collaboration (with S. Kopp,⁰ F. Abe et al.), Phys. Rev. Lett. 74, 341 (1995).
- 51. Measurement of Drell-Yan Electron and Muon Pair Differential Cross Sections in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with K. Bloom,⁰ F. Abe et al.), Phys. Rev. **D49**, R1 (1994).
- 50. Search for the Top Quark Decaying to a Charged Higgs Boson in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **73**, 2667 (1994).
- 49. Evidence for Top Quark Production in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with J. Romano,⁰ F. Abe et al.)Phys. Rev. **D50**, 2966 (1994).
- 48. Evidence for Top Quark Production in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with J. Romano,⁰ F. Abe et al.), Phys. Rev. Lett. **73**, 225 (1994).
- 47. Measurement of the Ratio $\sigma \cdot B(W \to e\nu)/\sigma \cdot B(Z^0 \to e^+e^-)$ in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with S. Kopp,⁻¹ F. Abe et al.), Phys. Rev. Lett. **73**, 220 (1994).
- 46. Measurement of the Production and Muonic Decay Rate of W and Z Bosons in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **69**, 28 (1992).
- 45. Measurement of the Ratio $B(W \to \tau \nu)/B(W \to e\nu)$ in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, as a Test of Lepton Universality, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 3398 (1992).

⁰graduate student

⁰graduate student

- 44. Search for New Gauge Bosons in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 1463 (1992).
- 43. Search for $W' \to e\nu$ and $W' \to \mu\nu$ in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 67, 2609 (1991).
- 42. Measurement of the e^+e^- Invariant-Mass Distribution in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with K. Bloom,⁰ F. Abe et al.), Phys. Rev. Lett. **67**, 2418 (1991).
- 41. Measurement of $\sigma \cdot B(W \to e\nu \text{ and } \sigma \cdot B(Z^0 \to e^+e^-) \text{ in } \bar{p}p$ Collisions at $\sqrt{s} = 1800$ GeV, The CDF Collaboration (with P. Derwent,⁰ F. Abe et al.), Phys. Rev. **D44**, 29 (1991).
- A Measurement of the W-Boson Mass in 1.8-TeV pp Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. D43, 2070 (1991).
- Measurement of the W-Boson Mass, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 65, 2243 (1990).
- 38. Measurement of the Ratio $\sigma(W \to e\nu)/\sigma(Z \to ee)$ in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with P. Derwent,⁰ F. Abe et al.), Phys. Rev. Lett. **64**, 152 (1990).
- 37. Search for the Top Quark in the Reaction $\bar{p}p \rightarrow \text{Electron} + \text{Jets}$ at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with F. Abe et al), Phys. Rev. Lett. **64**, 142 (1990).
- 36. Pseudorapidity Distributions of Charged Particles Produced in $\bar{p}p$ Interactions at $\sqrt{s} = 630$ and 1800 GeV, The CDF Collaboration (with R. Snider,⁰ F. Abe et al.), Phys. Rev. **D41**, 2330 (1990).
- 35. A Measurement of D* Production in Jets from $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with G. Redlinger,⁰ F. Abe et al.), Phys. Rev. Lett. **64**, 348 (1990).
- 34. Two Jet Invariant-Mass Distribution at $\sqrt{s} = 1.8$ TeV, The CDF Collaboration (with Y. Tsai,¹ F. Abe et al.), Phys. Rev. **D41**, 1722 (1990) as a Rapid Communication.
- 33. Measurement of the Mass and Width of the Z^0 Boson at the Fermilab Tevatron, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **63**, 720 (1989).
- Measurement of W-Boson Production in 1.8-TeV pp Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. 62, 1005 (1989).
- The CDF Detector: An Overview, The CDF Collaboration (with F. Abe et al.), Nucl. Instr. and Meth. A271, 387 (1988).
- A Two Level Fastbus Based Trigger System for CDF, (with D. Amidei et al.), Nucl. Instr. and Meth. A269, 51 (1988).
- Transient-Response Induction Detectors for Magnetic Monopoles: First Operation at 78K, (with S. Somalwar and J. Incandela), Phys. Rev. D37, 2403 (1988).
- First Results from a 1.1-m Diameter Superconducting Monopole Detector, (with J. Incandela and S. Somalwar), Phys. Rev. D34, 2637 (1986).
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3 Conference Proceedings

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- 26. H. Bhandari, H. J Frisch, S. Schubert and J. Smedley; Sputter Growth of Alkali Antimonide Photocathodes: An In Operando Materials Analysis; Proceedings of IPAC2015, May 3-8, 2015; Richmond VA
- 25. O.H.W. Siegmund, J.B. McPhate, J.V. Vallerga, A.S. Tremsin, H. Frisch, J. Elam, A. Mane, and R. Wagner; Large Area Event Counting Detectors with High Spatial and Temporal Resolution, Proceedings of the 15th International Workshop on Radiation Imaging Detectors; 23-27 June, 2103 Paris France JINST 9 C04002, pp. 1748-0221; April 2014 doi:10.1088/1748-0221/9/04/C04002 Dec, 2014
- 24. B. Adams, A. Elagin, H. J Frisch, R. Obaid, E. Oberla, A. Vostrikov, R. G. Wagner and M. Wetstein; *Measurements of the Gain, Time Resolution, and Spatial Resolution of a 20x20cm MCP-based Picosecond Photo-Detector*; Proceedings of the Vienna Conference on Instrumentation, April 2013 Nucl. Instr. Meth. Phys. Res. A732, (2013) 392
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4 US Patents

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- 3. USE OF FLAT PANEL MICROCHANNEL PHOTOMULTIPLIERS IN SAMPLING CALORIMETERS WITH TIMING; Chin-Tu Chen, Woon-Seng Choong, Henry J. Frisch, Jean-Francois Genat, Chien-Min Kao, Heejong Kim, and Fukun Tang, Inventors; US Provisional application 61/339,865 filed on March 9, 2010.
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- LARGE AREA, PICO-SECOND RESOLUTION, TIME OF FLIGHT DETECTORS; US Patent US 2007/0187596 A1; Aug 16, 2007 Henry J. Frisch, Harold Sanders, Fukun Tang, Tim Credo, Inventors

5 Collider Detector Experiment Internal Notes:

The best way to see what I have worked on is to look at CDF notes I have helped write.

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- 2. Status of the CDF Trigger (with M. Campbell, R. Gabriel, C. Grosso-Pilcher, and H. Sanders), CDF Note Number: 0157.
- 3. Triggers and Partitions, CDF Note Number: 0237.
- 4. Electron Sign Determination in the Forward Direction Revisited, CDF Note Number: 0242.
- 5. Beam-Beam Counters For CDF (with T. Liss, Y. Kikuchi, K. Kondo, and G. Redlinger), CDF Note Number: 0250.
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- 11. Trigger Simulation Studies (with G. Redlinger), CDF Note Number: 0468.
- 12. Specification of Event Filtering Protocol for CDF (with M. Campbell and M. Shapiro), CDF Note Number: 0474.
- 13. Missing E_t Analysis Plan (with B. Esposito and L. Nodulman), CDF Note Number: 0506.
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- 17. Top Pair Total Cross Sections (with B. Hollebeek and P. Sinervo), CDF Note Number: 0656, 4/18/88.
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- 20. Determination of the Z^0 Boson Mass and Width from the Combined CDF $Z^0 \rightarrow \mu^+\mu^-$ and $Z^0 \rightarrow e^+e^-$ Data Sample (with S. Errede), CDF Note Number: 0998, 8/4/89.
- A Measurement of the Ratio of W and Z Cross Sections (with C. Bowers, C. Campagnari, P. Derwent, S. Kopp, and M. Miller), CDF Note Number: 1026, 9/19/89.
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- A Few Observations About the WH Search (with A. Amadon, J. Berryhill, R. Culbertson, M. Hohlmann, M. Shochet, and D. Toback), CDF Note Number: 3502, 1/29/96.
- We Are Puzzled! (with A. Amadon, J. Berryhill, R. Culbertson, M. Hohlmann, M. Shochet, and D. Toback), CDF Note Number: 3524, 2/9/96.

- 59. A Search for SUSY Cousins of the $ee\gamma\gamma met$ Event in the $l\gamma met$ Channel (with J. Berryhill, R. Culbertson, and D. Toback), CDF Note Number: 3555, 2/18/96.
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- Minimal ZOOSY: Four Events (with J. Berryhill, R. Culbertson, D. Toback, and P. Wilson), CDF Note Number: 3571, 2/24/96.
- Search for New Physics in Events with Photon, b-tag, and met (with J. Berryhill, R. Culbertson, D. Toback, and P. Wilson), CDF Note Number: 3572, 2/24/96.
- 63. More (Less?) About the Tagging Excess in the W + 2 Jet Data (with A. Amadon, J. Berryhill, R. Culbertson, D. Toback, and P. Wilson), CDF Note Number: 3674, 5/10/96.
- 64. Update to CDF Note 3456: Search for Cousins of the eeγγmet Event in the Diphoton Channel (with J. Berryhill, R. Blair, R. Culbertson, J. Huston, S. Kuhlmann, T. Takano, D. Toback, and P. Wilson), CDF Note Number: 3850, 8/25/96.
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- 66. Fake, Overlap, Cosmic Ray and Standard Model Estimates for the 'Pseudo-*eeγγmet*' Event (with D. Toback, J. Berryhill, R. Culbertson, and P. Wilson), CDF Note Number: 3892, 9/25/96.
- 67. Comments on Run 65390, Event 16199: CDF's $\mu\mu\gamma\gamma + 2$ jet Candidate Event (with M. Contreras, and D. Toback), CDF Note Number: 3917, 10/17/96.
- 68. Dijet Mass of W + 2 Jet b-Tagged Events (with A. Amadon), CDF Note Number: 3926, 10/18/96.
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- 72. Summary of the $\gamma\gamma + X$ Counting Experiments (with D. Toback, P. Wilson, R. Culbertson, J. Berryhill, and R. Blair), CDF Note Number: 4183, 5/21/97.
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- Photon Selection for Exotic Analyses, (with J. Berryhill, R. Culbertson, C. Grosso-Pilcher, and P.J. Wilson), CDF Note Number: 4580, 5/7/98.
- 84. A Draft Specification of the Real-Time Monitoring Program 'Physmon', CDF Note Number: 4621, 6/2/98.
- CEM Phototube Base Modification for a TDC Dynode Output, (with R.G. Wagner), CDF Note Number: 4631, 6/10/98.
- A Search for SUSY Cousins, (with J. Berryhill, R. Culbertson, D. Toback, and P.J. Wilson), CDF Note Number: 4662, 7/6/98.
- Proposal to Instrument the Central and Plug EM Phototubes with TDCs, (with R. Wagner), CDF Note Number: 4694, 8/7/98.
- Search for Non-SM Production in the Tau-Gamma Channel, (with P. Murat, T. Andre, and J. Berryhill), CDF Note Number: 4702, 8/12/98.
- 89. Updated Limits for Gamma, b, Met Search, (with R. Culbertson), CDF Note Number: 4748, 9/20/98.
- Users Guide for Level 1 Electron, Photon and Jet Triggers, (with A. Amadon, R. Culbertson, C. Grosso-Pilcher, M. Shochet, D. Toback, J. Wahl, and P.J. Wilson), CDF Note Number: 4782, 10/17/98.
- 91. A Filter for 'One-Legged' Cosmic Ray Muons in Run 1B Data, CDF Note Number: 4830, 12/9/98.
- A Study of Photon Isolation via the Z Boson, (with D. Fernie, and C. Grosso-Pilcher), CDF Note Number: 4891, 2/16/99.
- 93. Introduction to High P_t Physics at the Tevatron, CDF Note Number: 4961, 4/22/99.
- 94. A Search for New Physics in Inclusive Photon-Lepton Events I: Standard Model Expectations, (with T. Andre, J. Berryhill, R. Culbertson, N. Lai, P. Murat, and P.J. Wilson), CDF Note Number: 4976, 5/3/99.
- 95. A Search for New Physics in Inclusive Photon-Lepton Events II: Run IB Results, (T. Andre, J. Berryhill, R. Culbertson, N. Lai, P. Murat, and P.J. Wilson), CDF Note Number: 4977, 5/3/99.
- 96. Hardware Design and Specification of the SVT Track Fitter, (with T. Nakaya, M. Bogdan, R. Culbertson, H. Sanders, and M. Shochet), CDF Note Number: 5026, 6/3/99.
- 97. Search for the Charged Higgs Boson in the Decays of Top Quark Pairs in the $e\tau$ and $\mu\tau$ Dilepton Channel, (with M. Gallinaro, and M. Hohlmann), CDF Note Number: 5098, 8/23/99.
- Combining the CDF and D0 R Measurements, (with S. Eno, G. Gomez, M. Lancaster, D. Toback, J. Wahl, and D. Wood), CDF Note Number: 5139, 10/6/99.
- 99. Direct Measurement of the W Boson Width in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV, (with W. Ashmanskas, D. Garfinkel, Hardman, and M. Lancaster), CDF Note Number: 5148, 10/18/99.
- 100. The Underlying Event: Dijet vs. Z-jet; (with Rick Field, Richard Haas, and David Stuart), CDF Note Number: CDF/ANAL/CDF/CDFR/5295; 4/19/00.
- 101. Comparison of Run 1B Lepton-Photon Data to the Standard Model W γ and Z γ Background, (with Troy Andre and Jeff Berryhill), CDF Note Number: CDF/ANAL/EXOTIC/CDFR/5330; 5/31/00.
- 102. Specification of Transition Module for Autonomous inputs to PreFRED, (with C.R.S. Prescod-Weinstein and P.J. Wilson), CDF Note Number: CDF/DOC/TRIGGER/CDFR/5403; 8/22/00.

- 103. List of 'Banks' in the Run II PAD Format; (with Ray Culbertson, Pasha Murat, Simona Rolli, David Saltzberg, Pierre Savard, Rick Snider, Peter Tamburello, Robert G. Wagner and Avi Yagil), CDF Note Number: CDF/DOC/CDF/CDFR/5404; 8/27/00.
- 104. Search for New Physics in Events with a Photon and b-quark jet at CDF; (with T. Affolder et al., The CDF Collaboration (R. Culbertson, H. Frisch), CDF Note Number: CDF/PUB/EXOTIC/PUBLIC/5450; 10/7/00.
- 105. A Search for New Physics in Photon-Lepton Events; (with J. Berryhill), CDF Note Number: CDF/ANAL/EXOTIC/CDFR/5482; 11/1/00.
- 106. Performance of SVT during the commissioning run; (with Ashmanskas, Barchiesi, Bardi, Bari, Belforte, Berryhill, Bogdan, Carosi, Cerri, Chlachidze, Culberston, Dell'Orso, Donati, Frisch, Galeotti, Giannetti, Glagolev, Moneta, Morsani, Nakaya, Passuello, Punzi, Rescigno, Ristori, Sanders, Sarkar, Semenov, Shochet, Speer, Spinella, Vataga, Wu, Yang, Zanello, and Zanetti), CDF Note Number: CDF/MEMO/TRIGGER/CDFR/5511; 12/1/00.
- 107. Proposal to Add Timing Information Into the Readout of the Central and Plug Electromagnetic Calorimeters; (with D. Toback, T. Kamon, S.W. Lee, J. Londono, H. Frisch, P. Onyisi, C. Grosso-Pilcher, R.G. Wagner, M. Cordelli), CDF Note Number: CDF/DOC/CALORIMETRY/CDFR/5518; 12/14/00.
- 108. Search for Narrow Diphoton Resonances and for gamma-gamma+W/Z Signatures in p-/p Collisions at sqrt-s= 1.8 TeV; (with Andrea Castro and Peter Wilson), CDF Note Number: CDF/PUB/EXOTIC/PUBLIC/5560; 2/19/01.
- 109. Search for W'->WZ in the enu+jet-jet Decay Channel; (with Dave Toback, Henry Frisch and Chris Battle), CDF Note Number: CDF/ANAL/EXOTIC/CDFR/5610; 4/9/01.
- 110. The Good Run List; (with William Badgett, Rick St. Denis, and Tony Vaiciulis), CDF Note Number: CDF/MEMO/PRODUCTION/PUBLIC/5613; 4/10/01.
- 111. Thoughts on Using the Express Line to Validate the Data (with Nancy Lai and David Toback), CDF Note Number: CDF/PHYS/TRIGGER/PUBLIC/5622; 4/26/01.
- 112. Draft Proposal for the Summer-2002 Top Dilepton Analysis and Top Dilepton Dataset; (with Mircea Coca, David Goldstein, Jaco Konigsberg, Mark Kruse, Nancy Lai, Carla Pilcher, David Saltzberg, and Paul Tipton),
 CDE Note: Note: CDE / DUVG / TOP / DUVG / DUVG

CDF Note Number: CDF/PHYS/TOP/PUBLIC/5676; 7/13/01.

- 113. Performance of the CDF Online Silicon Vertex Tracker (with, Bardi, Belloni, Carosi, Chalachidze, Dell'Orso, Donati, Galeotti, Giannetti, Glagolev, Morsani, Passuello, Punzi, Ristori, Semenov, Spinella, Barchiesi, Rescigno, Sarkar, Zanello, Bari, Belforte, Zanetti, Fiori, Ashmanskas, Baumgart, Berryhill, Bogdan, Culbertson, Nakaya, Sanders, Shochet, Yang, Cerri, Liu, Moneta, Speer, Wu), CDF Note Number: CDF/PUB/SEC/VTX/PUBLIC/5747; 10/16/01.
- 114. Limits on Extra Dimensions and New Particle Production in the Photon and Missing Energy Signature in p-pbar Collisions at Root-s=1.8 TeV; (with P. Onyisi), CDF Note Number: CDF/PUB/EXOTIC/CDFR/5765; 11/4/01.
- 115. Search for New Physics in Photon-Lepton Events in p-pbar Collisions at Root-s=1.8 TeV;(with J. Berryhill), CDF Note Number: CDF/PUB/EXOTIC/PUBLIC/5819; 12/21/01.
- 116. The CDF-II Online Silicon Vertex Tracker, (with Ashmanskas, Barchiesi, Bardi, Bari, Baumgart, Belforte, Belloni, Berryhill, Bogdan, Carosi, Cerri, Chlachidze, Culbertson, Dell'Orso, Donati, Fiori, Galeotti, Giannetti, Glagolev, Liu, Meschi, Moneta, Morsani, Nakaya, Passuello, Punzi, Rescigno, Ristori, Sanders, Sarkar, Semenov, Shochet, Speer, Spinella, et al.); CDF Note Number: CDF/PUB/TRIGGER/PUBLIC/5820; 12/22/01.
- 117. Top Dilepton Monte Carlo Datasets and Disk Needs; (with Mircea Coca, David Goldstein, Jaco Konigsberg, Mark Kruse, Natalia Kuznetsova, Carla Pilcher, David Saltzberg, Paul Tipton, and Un-Ki Yang), CDF Note Number: CDF/ANAL/TOP/PUBLIC/5821; 12/30/01.

- 118. Performance of the CDF Online Silicon Vertex Tracker, (with Ashmanskas, Barchiesi, Bardi, Bari, Baumgart, Belforte, Belloni, Berryhill, Bogdan, Carosi, Cerri, Chlachidze, Culberston, Dell'Orso, Donati, Fiori, Galeotti, Giannetti, Glagolev, Liu, Meschi, Moneta, Morsani, Nakaya, Passuello, Punzi, Rescigno, Ristori, Sanders, Sarkar, Semenov, Shochet, Speer, Spinella, and Wu), CDF Note Number: CDF/PUB/TRIGGER/PUBLIC/5854; 2/14/02.
- 119. A Run II event containing two photons, one positron and large MEt, (with Ray Culbertson, Beate Heinemann, Petra Merkel and David Toback), CDF Note Number: CDF/PHYS/EXOTIC/CDFR/5882; 3/11/02.
- 120. The Merits of Stand-Alone Monte Carlo Generation, Henry Frisch, CDF Note Number: CDF/PHYS/MONTECARLO/PUBLIC/5938; 4/27/02 Pub. Info: Talk at the CDF Monte Carlo Workshop April 27, 2002.
- 121. The Ratio of W+N-jets To Z+N-jets Versus N As a Precision Test of the Standard Model, (with Erin Collins), CDF Note Number: CDF/PHYS/ELECTROWEAK/PUBLIC/5963; 5/12/02.
- 122. Mezzanine card design specifications for the PULSAR board, (with Natalia Kuznetsova, Mircea Bogdan, Ted Liu, Harold Sanders, and Peter Wittich), CDF Note Number: CDF/DOC/TRIGGER/PUBLIC/6032; 7/8/02.
- 123. Predicted Cross Sections for W+Photon and Z+Photon Production, (with Chadd Smith), CDF Note Number: CDF/PHYS/ELECTROWEAK/PUBLIC/6057; 7/28/02.
- 124. Standardized Comparison of Matrix Element Monte Carlo Event Generators, (with Susana Cabrera, Erin Collins, Sebastian Carron, Claudio Ferretti, David Gerdes, Gervasio Gomez, Andrea Messina, Teresa Rodrigo, Rob Roser, Subir Sarkar, Mitchell Soderbeg, Evelyn Thomson, Soushi Tsuno, Rocio Vilar and Collin Wolfe), CDE Note Number, CDE / DUVE / / DUDI IC / 6062, 8 /1 / 02

CDF Note Number: CDF/PHYS//PUBLIC/6063; 8/1/02.

- 125. Using Track Impact Parameter to Distinguish Hadronically-Decaying Taus in Top Quark Decays, (with Matt Reece), CDF Note Number: CDF/ANAL/TOP/CDFR/6203; 12/2/02.
- 126. Top Dilepton Working Group Document for Winter 2003 (with Cabrera, Coca, Chung, Eusebi, Halkiadakis, Hocker, Ivanov, Koehn, Kovalev, Kruse, Wolfe, Yang, et.al.) CDF Note Number: CDF/DOC/TOP/GROUP/6219; 12/9/02.
- 127. Run IIb Upgrade for CDF L2 Decision Crate; (with Ashmanskas, Blair, Bogdan, Dawson, Demaat, Hahn, Keener, Kroll, Kwang, Lewis, Lin, Liu, Meyer, Patrick, Pitkanen, Proudfoot, Reisert, Sanders, Shochet, Spinella, van Berg, Wilson, and Wittich), CDF Note Number: CDF/DOC/TRIGGER/CDFR/6259; 1/8/03.
- 128. Winter 2003 Measurement of the t-tbar Cross Section in the Dilepton Decay Channel, (with J. Antos, A. Beretvas, S. Cabrera, S. Carron, M. Coca, J. Chung, R. Eusebi, E. Halkiadakis, A. Hocker, P. Koehn, A. Kovalev, M. Kruse, A. Ivanov, M. Siket, P. Tipton, H. Williams, U. K. Yang), CDF Note Number:CDF/PHYS/TOP/CDFR/6319; 2/10/03.
- 129. Revisiting the '2-Jet Excess' in W+btags: Are we Calculating Wbb and Wcc Correctly? Henry J. Frisch, CDF Note Number: CDF/ANAL/TOP/PUBLIC/6352; 3/2/03.
- 130. The CDF Silicon Vertex Trigger; Ashmanskas, Barchiesi, Bardi, et al., Pub. Proceedings 9th Pisa Meeting on Advanced Detectors, La Biodola, Isola d'Elba, Italy, May 25-31, 2003. FERMILAB-CONF-03/168-E. CDF/PUB/TRIGGER/PUBLIC/6502; 6/9/03
- 131. The Ratio of WNjets To ZNjets Versus N As a Precision Test of the Standard Model; Erin Abouzaid and Henry Frisch; CDF/PUB/EXOTIC/PUBLIC/6587; accepted for publication in PRD 7/22/03

- 132. Identification of $\tau \to \pi^+ \pi^0$ at CDF; Matt Reece and Henry Frisch; CDF/ANAL/TOP/CDFR/6638; 8/20/03
- 133. TDC-II Design and Specification: Run IIB TDC for the COT; Mircea Bogdan, Harold Sanders, Henry Frisch, Ting Miao, Steve Chappa, Bob DeMaat; CDF/DOC//PUBLIC/6999; 5/4/04
- 134. Test and Checkout Software Design for the Run IIB TDC-II; Ting Miao, Rod Klein, Alexander Paramonov, Steve Chappa, Henry Frisch; CDF/DOC//PUBLIC/7000; 5/4/04
- 135. Search For Lepton-Photon events; Andrei Loginov, Henry Frisch; CDF/PHYS/EXOTIC/PUBLIC/7040; 6/1/04
- 136. Investigating Rho Backgrounds to Hadronic Tau Decay; Matt Reece and Henry Frisch; CDF/ANAL/TOP/CDFR/7140; 7/22/04
- 137. Cross Sections and Samples for SM Backgrounds to Multiple Gauge Boson Events; Henry J. Frisch; CDF/PHYS/TOP/PUBLIC/7215; 8/27/04
- 138. Implementation of the Bjorken-Pakvasa-Tuan Model in MadGraph; Arjun Menon and Henry Frisch; CDF/PHYS/EXOTIC/PUBLIC/7516; 3/2/05
- 139. Appendix A to CDF6057; Final MadGraph $W\gamma$, $Z\gamma$, $W\gamma\gamma$, and $Z\gamma\gamma$ Datasets; Henry Frisch; CDF/PHYS/ELECTROWEAK/PUBLIC/7523; 3/5/05
- 140. Search for Lepton-Photon Events in 350 pb-1; Henry Frisch, Andrei Loginov; CDF/PHYS/EXOTIC/PUBLIC/7550; 3/20/05
- 141. The Timing System for the CDF Electromagnetic Calorimeters; M. Goncharov, T. Kamon, S.W. Lee, V. Krutelyov, V. Khotilovich, D. Toback, P. Wagner, H. Frisch, H. Sanders, M. Cordelli, F. Happacher, S. Miscetti, and R. Wagner ; CDF/PUB/CALORIMETRY/PUBLIC/7918 Submitted to NIM 12/16/05
- 142. Measuring Backgrounds to High-Pt Electrons and Muons in W, Z, and Inclusive Lepton Samples; Henry Frisch, Carla Grosso-Pilcher, Stephen Levy, Andrei Loginov, Alexander Paramonov, Collin Wolfe; CDF/PHYS/EXOTIC/CDFR/7965; 12/5/05
- 143. Study of Anomalous Production of Z-Bosons with High Transverse Momentum at the Tevatron Author(s): Henry J. Frisch and Alexander A. Paramonov CDF Note Number: CDF/ANAL/EXOTIC/GROUP/8033 Date: 1/13/06
- 144. Search for Heavy Right-handed Quarks in the emu+X Channel Author(s): Collin Wolfe Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/GROUP/8056 Date: 1/23/06
- 145. Search for $\gamma\gamma + eor\mu$ in 683.7 pb-1 of Data Author(s): Shin-Shan Eiko Yu, Ray Culbertson, and the gamma gamma + X group: Henry Frisch, Max Goncharov, Soon Yung Jun, Andrei Loginov, Alexandre Pronko, David Toback, Peter Wagner CDF Note Number: CDF/ANAL/EXOTIC/CDFR/8064 Date: 1/24/06

- 146. Search for Anomalous Triphoton and Diphoton+Tau Events Author(s): Ray Culbertson, Henry Frisch, Max Goncharov, Soon Jun, Sasha Pronko, Dave Toback, Peter Wagner, Shin-Shan Eiko Yu CDF Note Number: CDF/ANAL/EXOTIC/CDFR/8079 Date: 2/6/06
- 147. Zgamma and Wgamma MC MadGraph and Baur Samples Author(s): H.Frisch, A.Loginov, S.Tsuno CDF Note Number: CDF/PUB/MONTECARLO/PUBLIC/8116 Date: 2/21/06
- 148. Pythia Settings for Generating Wgamma, Zgamma, Wgammagamma, Zgammagamma Monte Carlo. SM Matching Author(s): Ray Culbertson, Rick Field, Henry Frisch, Al Goshaw, Beate Heinemann, Mike Kirby, Andrei Loginov, Stephen Mrenna, Pasha Murat, Soushi Tsuno, Un-Ki Yang CDF Note Number: CDF/MEMO/MONTECARLO/PUBLIC/8126 Date: 2/24/06
- 149. Study of Anomalous Production of Z-Bosons with High Transverse Momentum at the Tevatron Author(s): Henry J. Frisch, Alexander A. Paramonov, Stephen Levy, Carla Pilcher, and Collin Wolfe CDF Note Number: CDF/PHYS/EXOTIC/PUBLIC/8164 Date: 3/16/06
- 150. Tau Likelihood Selection Author(s): Stephen Levy Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/CDFR/8249 Date: 5/9/06
- 151. Anomalous tau production in b-tagged top quark events Author(s): Stephen Levy Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/CDFR/8287 Date: 5/29/06
- 152. Anomalous Production of Z-Bosons with High Transverse Momentum in 0.94 pb-1 at the Tevatron Author(s): Henry J. Frisch and Alexander A. Paramonov CDF Note Number: CDF/ANAL/EXOTIC/GROUP/8316 Date: 6/13/06
- 153. Search for anomalous tau production in b-tagged top quark events Author(s): Stephen Levy, Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/PUBLIC/8353 Date: 6/29/06
- 154. Search for Lepton-Photon Events in 1 fb-1 Author(s): Henry Frisch, Andrei Loginov CDF Note Number: CDF/PUB/EXOTIC//8360 Date:7/3/06
- 155. A Search for Anomalous Production of the Signature l+g+b+MET and a Search for SM ttbar+g in 1invfb Author(s): Irina Shreyber, Andrei Loginov, Henry Frisch CDF Note Number: CDF/PHYS/EXOTIC/PUBLIC/8371 Date: 7/10/06
- 156. Proposal for Level-2 Calorimeter Trigger Upgrade Author(s): A. Bhatti, M. Convery, M. Dell'Orso, G. Flanagan, H. Frisch, P. Giannetti, O. Gonzalez, M. Jones, T. Liu, D. Lucchesi, M. Piendibene, L. Ristori, L. Rogondino, V. Rusu, L. Sartori, S. Torre, V. Veszpremi, M. Vidal, S.M. Wang CDF Note Number: CDF/DOC/TRIGGER/CDFR/8415 Date: 7/24/06

- 157. Search for New Physics in Lepton+Photon+X Events in 1 fb-1 Author(s): Andrei Loginov, Henry Frisch CDF Note Number: CDF/PUB/EXOTIC/PUBLIC/8427 Date 7/29/06
- 158. Anomalous Production of Z-Bosons with High Transverse Momentum in 0.94 pb-1 at the Tevatron Author(s): Henry J. Frisch and Alexander A. Paramonov CDF Note Number: CDF/PHYS/EXOTIC/PUBLIC/8452 Date: 8/10/06
- 159. Search for Anomalous Production of gamma gamma + e or mu in 1 fb-1 of Data Author(s): Shin-Shan Eiko Yu, Ray Culbertson, and the dipho + X group: Henry Frisch, Max Goncharov, Alexandre Pronko, David Toback CDF Note Number: CDF/PHYS/EXOTIC/CDFR/8462 Date: 8/18/06
- 160. Mezzanine Card Specifications for the Level-2 Calorimeter Trigger Upgrade Author(s): L.Sartori, A.Bhatti, A.Canepa, M.Casarsa, M.Covery, G.Cortiana, M.Dell'Orso, G.Flanegan, H.Frisch, P.Giannetti, O.Gonzalez, T.Liu, D.Lucchesi, R.Northrop, D.Pantano, M.Piendibene, L.Ristori, L.Rogondino, V.Rusu, S.Torre, Y.Tu, Y.Veszpremi, M.Vidal,S.M.Wang CDF Note Number: CDF/DOC/TRIGGER/CDFR/8533 Date: 10/8/06
- 161. Updated Measurement of Anomalous Tau Production in b-tagged Top Quark Events Using 955 pb-1 of Data Author(s): Stephen Levy, Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/CDFR/8558 Date: 10/16/06
- 162. Results of a Search for Heavy, Right-handed Quarks in Dileptons+X Author(s): Collin Wolfe, Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/GROUP/8815 Date: 5/20/07
- 163. L2CAL The L2 Calorimeter Trigger Upgrade Author(s): A.Canepa, M.Casarsa, M.Convery, G.Cortiana, S.Donati, G.Flanagan, H.Frisch, D.Krop, C.Pilcher, P.Gianetti, V.Greco, T.Liu, D.Lucchesi, S.Pagan-Griso, E.Pianori, M.Piendibene, L.Ristori, L.Rogondino, V.Rusu, L.Sartori, M.Schmidt, M.Vidal CDF Note Number: CDF/DOC/TRIGGER/CDFR/8940 Date: 8/2/07
- 164. Fake Rate Study for BPT Dileptons+X Analysis Author(s): Collin Wolfe, Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/GROUP/8946 Date: 8/6/07
- 165. A limit on the Branching Ratio of the Flavor-Changing Top Quark Decay t->Zc Author(s): Alexander Paramonov and Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC/GROUP/9101 Date: 11/13/07
- 166. Search for Anomalous Production of Di-photon+MET Events in 2 fb-1 of Data. Author(s): R. Culbertson, A. Pronko, M. Goncharov and the dipho+X group: H. Frisch, Soon Yung Jun, Shin-Shan Eiko Yu. CDF Note Number: CDF/PHYS/EXOTIC/CDFR/9184 Date: 2/4/08
- 167. The CDF Level 2 Calorimetric Trigger Author(s): A.Canepa, M.Casarsa, M.Convery, G.Cortiana, S.Donati, G.Flanagan, H.Frisch, D.Krop, C.Pilcher, P.Gianetti, V.Greco, T.Liu, D.Lucchesi, S.Pagan-Griso, E.Pianori, M.Piendibene, L.Ristori, L.Rogondino, V.Rusu, L.Sartori, M.Schmidt, M.Vidal

CDF Note Number: CDF/PUB/TRIGGER/PUBLIC/9233 Date: 3/7/08

- 168. Search for Anomalous Production of gamma+b+j+MET+X Author(s): R. Culbertson, S.S. Yu, H. Frisch, D. Krop, C. Pilcher, S. Wilbur CDF Note Number: CDF/ANAL/EXOTIC/CDFR/9260 Date: 3/23/08
- 169. Signature-Based Search for Anomalous l+g+met+b and a Search for SM Top+Antitop+ Gamma Production in in 2fb-1 Author(s): Irina Shreyber, Andrei Loginov, Henry Frisch CDF Note Number: CDF/ANAL/EXOTIC//9272 Date: 3/26/08
- 170. A limit on the Branching Ratio of the Flavor-Changing Top Quark Decay t->Zc Author(s): Alexander Paramonov and Henry Frisch CDF Note Number: CDF/PUB/EXOTIC/PUBLIC/9285 Date: 4/70/08
- 171. Search for anomalous production of gamma+b+j+MET+X Author(s): Ray Culbertson, Henry Frisch, Dan Krop, Carla Pilcher, Scott Wilbur, Shin-Shan Yu CDF Note Number: CDF/PUB/EXOTIC/PUBLIC/9296 Date: 4/18/08

6 Selected Invited Talks

- 1. Pisa and the Collider Detector at Fermilab; Pisa, Italy, Nov. 11, 2017.
- 2. The Psec/LAPPD program at Chicago; CPAD, Albuquerque NM; Oct. 13, 2017.
- 3. Drifting Photons on Optical Paths, Mirrors, Sub-mm Resolution in Four Dimensions, and Six-Dimensional Phase Space: Exploiting Psec Time Resolution; 5th International Conference on Micro-Patterned Gas Detectors (MPGD2017); Temple Univ., Philadelphia; May 25, 2017.
- Jim, Hard Scattering, and the Parton Model; in memorial of James Cronin, Univ. of Chicago, Sept. 30, 2016.
- The History of the LAPPD Collaboration; presented (by M. Wetstein) at the Univ. of Hawaii; July 20, 2015.
- The Development of the Optical Time Projection Chamber, 15-GigaSample/sec Waveform Sampling Electronics, and Second-Generation LAPPD(Trademark) at the University of Chicago; presented (by M. Wetstein) at the Univ. of Hawaii; July 21, 2015.
- 7. The Challenges and Applications of Sub-psec Large-area Detectors; TIPP, Amsterdam NH; June 5, 2014.
- 8. Prospects and Plans for LAPPDs: First Annie Collaboration Meeting.
- 9. Developing Large-Area Psec Photodetectors; 2nd Bejing Meeting.
- 10. Large-Area Psec Photodetectors: Applications and Development; Colloquium, IIT, April 11, 2013.
- 11. Three Years of LAPPD; DOE Review, Argonne, Dec. 18, 2012.
- 12. Development of Large-Area Psec Photodetectors; SLAC Seminar, June 20, 2012.
- 13. Development of Large-Area Psec Photodetectors; RealTime 2012, Berkeley Cal., June 11, 2012.
- Electronics and System Integration for Large-Area, Pico-Second Photodetectors; SORMA_West, Oakland Ca, May 17, 2012.
- 15. Ultra-fast Timing etc.; Light11, Ringwald Castle, Germany; Oct. 10, 2011.

- 16. ANT11 Neutrino Detector Conference, Phil. NJ; Oct. 10, 2011.
- 17. Uli Baur Memorial, Sept. 24, 2011.
- 18. EFI Colloquium, May. 2, 2011.
- 19. Talk on LAPPD at the Knoxville IEEE Workshop, Oct.31, 2010.
- 20. The Large-Area Psec PhotoDetector Project: Argonne Oct 6, 2010.
- 21. What Does It Take to Start a University-Lab Detector Program?: Fermilab Detector Workshop, Oct 8, 2010.
- 22. The Development of Large-Area Psec Planar Photo-Detectors and How the US might Regain the Energy Frontier March 20, 2010.
- 23. The Development of Large-Area Psec Planar Photo-Detectors, Austin TX, March 20, 2010.
- 24. Fermilab Talk for Chris Hill, March 4, 2010.
- 25. The Large-Area Psec Photo-Detector Collaboration DOE HEP Site Visit, Argonne; Sept. 23-24, 2009.
- The Development of Large-Area Psec-Resolution Detectors; HEPD Presentations and Visit, Argonne; June 6, 2009.
- Testing the Standard Model; A History and Rationale for Signature-Based Searches; Pheno09, Madison Wisconsin, May 11, 2009.
- The Development of Large-Area Psec-Resolution Detectors; Advanced Photon Source Users Meeting, Argonne; May 6, 2009.
- 29. LHCb Upgrade-informal hash of slides for an LHCb Upgrade group meeting; April 9, 2009.
- Goals of the Workshop on Development of Large Area Fast Photo-detectors, Argonne National Laboratory, Feb 26, 2009.
- 31. Development of Large Area Fast Photo-detectors, Lawrence Berkeley National Laboratory, Feb 3, 2009.
- 32. Large Area Micro-Pore Photo-detectors, Argonne National Laboratory, Dec 20, 2008.
- 33. Timing in HEP, Lyon France, Oct 14, 2008.
- 34. Development of Large-Area Psec TOF, ANL/Fermilab/UC Collaborative Presentations, Jun 26, 2008.
- 35. The Future of Pico-second Timing, Final talk at the Workshop of Psec Timing, Chicago, IL March 18, 2008.
- 36. Thoughts Invoked By Dr. Atomic at Lyric Opera, Gleicher Center, Chicago IL, Jan. 19, 2008.
- Three Lectures: Precision Measurements and Signature-Based Searches at the Tevatron, XXXV International Meeting on Fundamental Physics, Santiago de Compostela, Spain; May 28, 2007.
- Precision Measurements, Small Crossections, and Non-Standard Signatures- The Learning Curve at a Hadron Collider: Michigan State Univ., East Lansing, Mich May 12, 2007.
- Precision Measurements and Signature-Based Searches at the Tevatron, Physics at the LHC: From Experiment to Theory), Princeton, NJ, March 21, 2007.
- 40. Pico-second Time of Flight; IBM, Yorktown NY; March 20, 2007.
- 41. Pico-second Time of Flight Workshop on Fast Timing, Saclay, France; March 8 and 9).
- 42. The Ultimate Potential of the Tevatron, C2CR07 Conference, Granlibakken, Calif., Feb 26, 2007.
- 43. For Gordy Kane's 70th Birthday, KaneFest Symposium, East Lansing, Mich., Jan. 19, 2007.
- 44. Picosecond Timing: Why Simulation is Essential, Opening talk, Workshop on the Simulation of Psec Detectors, Chicago, IL, Dec. 12, 2006.

- 45. The Development of Large-Area Psec-Resolution TOF Detectors; 2nd Workshop on Psec TOF, Arlington TX; April 28, 2006.
- Two Lectures on High Energy Collider Physics: Making Precision Measurements; Lake Louise Winter Institute, Lake Louise, Alberta, Canada; Feb. 17-23, 2006.
- (Very Little) Summary Talk, Workshop on Pico-second Time-of-Flight; University of Chicago; November 18, 2005.
- 48. Pico-second Time-of-Flight Detector Development; Research Techniques Seminar, Fermilab; July 13, 2005.
- 49. Topics at the Tevatron: CDF and D0 at 1.96 TeV, and a Christmas Wish List; Annual UK Theory Meeting, Durham, December 16-18, 2004.
- 50. The Twin Questions of Authorship and Reproducibility of Results in Large Scientific Collaborations; Philosophy of Science Association; Austin Texas; November 18, 2004.
- Visions of Experimental Particle Physics Where Are We Going? (Invited Talk, Aspen Winter Conference; January 26, 2003).
- Signature Based Searches, High Pt Leptons, Top Physics; Some UC Interests and Contributions (Talk to the NSF, Fermilab; November 19, 2002).
- Making Precision QCD Measurements at Very High Energies (Talk at Matrix Element Workshop, October 4, 2002).
- 54. Standard Model Backgrounds for the Top Dilepton and W+Jets Analyses (Talk at W+Jets, Dilepton Groups, October 23, 2002).
- 55. Erin Abouzaid's Talk on W/Z Ratio Work (Erin's Talk at
- 56. What Could Experiment Tell String Theory? (Talk to EFI Mini-Symposium, October 26, 2001).
- 57. New Physics at the Tevatron? (Invited Talk, 'From the Smallest to the Largest Distances', a tribute to Tran Than Van, Moscow, May, 2001).
- 58. Higgs Searches At the Tevatron (Invited Talk at SUSY2000, CERN, Geneva, Switz. June 27th, 2000).
- Introduction to High Pt Physics at the Tevatron (Two Lectures at the NATO Summer School, Cargese, France, July 1998).
- 60. Searches for Supersymmetry at the Tevatron (Invited talk, SUSY98, Oxford England, June 1998).
- 61. The Search for Supersymmetry at the Tevatron Collider, with M. Carena, (Fermilab), R.L. Culbertson (UC), S. Eno (Maryland), and S. Mrenna (ANL), hep-ex/9712022, to appear in the book "Perspectives in Supersymmetry," edited by G.L. Kane, World Scientific.
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