

## 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 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://lappdocs.uchicago.edu>

### 1 Primary Publications:

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

115. J. F. Shida, E. Spiegler, B. W. Adams, E. Angelico, K. Domurat-Sousa, A. Elagin, H. J. Frisch, P. La Rivière, A. H. Squires  
*Low-Dose High-Resolution TOF-PET Using Ionization-activated Multi-State Low-Z Detector Media*  
arXiv e-Print: 2108.01715 (Aug 3, 2021)  
Submitted to Nucl. Inst. and Meth. A
114. Jinseo Park, Fangjian Wu, Evan Angelico, Henry J. Frisch, Eric Spiegler;  
*Patterned anodes with sub-millimeter 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. Spiegler, 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://lappdocs.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  $t\bar{t}\gamma$  Production and Measurement of  $\sigma_{t\bar{t}\gamma}/\sigma_{t\bar{t}}$ ,*  
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  $t \rightarrow Zc$  Using Ratios of  $Z+4$  Jets to  $W+4$  Jets Production;*  
Phys. Rev. D80, 052001 (Aug 2009);
89. 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)
88. 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  $929 \text{ pb}^{-1}$  of  $ppbar$  Collisions at  $\sqrt{s} = 1.96 \text{ TeV}$*   
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  $305 \text{ pb}^{-1}$  of  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.96 \text{ TeV}$ ;*  
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)
83. 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  $Z^0/\gamma^* + N$  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  $p\bar{p}$  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  $\sqrt{s} = 1.8$  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  $p\bar{p}$  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  $e\tau$  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  $\Omega_T$  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)
71. 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)
69. 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)
65. 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  $E_\eta$  or  $\mu_\eta$  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,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **79**, 3585 (1997)
60. Forward-Backward Charge Asymmetry of Electron Pairs Above the  $Z^0$  Pole, The CDF Collaboration (with Jeff Berryhill,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **77**, 2616 (1996)
59. Measurement of  $\sigma B(W \rightarrow e\nu)$  and  $\sigma B(Z^0 \rightarrow e^+e^-)$  in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with S. Kopp,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **76**, 3070 (1996)
58. Measurement of the Ratio  $\sigma B(\bar{p}p \rightarrow W \rightarrow e\nu)/\sigma B(\bar{p}p \rightarrow Z^0 \rightarrow ee)$  in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with S. Kopp,<sup>0</sup> F. Abe et al.), Phys. Rev. **D52**, 2624 (1995)
57. Measurement of the W Boson Mass, The CDF Collaboration (with D. Saltzberg,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **75**, 11 (1995).
56. Measurement of the W Boson Mass, The CDF Collaboration (with D. Saltzberg,<sup>0</sup> 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,<sup>0</sup> 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,<sup>0</sup> 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).
52. Direct Measurement of the W Boson Width, The CDF Collaboration (with S. Kopp,<sup>0</sup> 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,<sup>0</sup> 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,<sup>0</sup> 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,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **73**, 225 (1994).
47. Measurement of the Ratio  $\sigma \cdot B(W \rightarrow e\nu)/\sigma \cdot B(Z^0 \rightarrow e^+e^-)$  in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with S. Kopp,<sup>-1</sup> F. Abe et al.), Phys. Rev. Lett. **73**, 220 (1994).

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<sup>0</sup>graduate student

<sup>0</sup>graduate student

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  $B(W \rightarrow \tau\nu)/B(W \rightarrow e\nu)$  in  $p\bar{p}$  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).
44. Search for New Gauge Bosons in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 1463 (1992).
43. Search for  $W' \rightarrow e\nu$  and  $W' \rightarrow \mu\nu$  in  $p\bar{p}$  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  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with K. Bloom,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **67**, 2418 (1991).
41. Measurement of  $\sigma \cdot B(W \rightarrow e\nu)$  and  $\sigma \cdot B(Z^0 \rightarrow e^+e^-)$  in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1800$  GeV, The CDF Collaboration (with P. Derwent,<sup>0</sup> F. Abe et al.), Phys. Rev. **D44**, 29 (1991).
40. A Measurement of the W-Boson Mass in 1.8-TeV  $p\bar{p}$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D43**, 2070 (1991).
39. 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  $\sigma(W \rightarrow e\nu)/\sigma(Z \rightarrow ee)$  in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with P. Derwent,<sup>0</sup> F. Abe et al.), Phys. Rev. Lett. **64**, 152 (1990).
37. Search for the Top Quark in the Reaction  $p\bar{p} \rightarrow$  Electron + 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  $p\bar{p}$  Interactions at  $\sqrt{s} = 630$  and 1800 GeV, The CDF Collaboration (with R. Snider,<sup>0</sup> F. Abe et al.), Phys. Rev. **D41**, 2330 (1990).
35. A Measurement of D\* Production in Jets from  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with G. Redlinger,<sup>0</sup> 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,<sup>1</sup> 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).
32. Measurement of W-Boson Production in 1.8-TeV  $p\bar{p}$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **62**, 1005 (1989).
31. The CDF Detector: An Overview, The CDF Collaboration (with F. Abe et al.), Nucl. Instr. and Meth. **A271**, 387 (1988).
30. A Two Level Fastbus Based Trigger System for CDF, (with D. Amidei et al.), Nucl. Instr. and Meth. **A269**, 51 (1988).
29. Transient-Response Induction Detectors for Magnetic Monopoles: First Operation at 78K, (with S. Somalwar and J. Incandela), Phys. Rev. **D37**, 2403 (1988).
28. First Results from a 1.1-m Diameter Superconducting Monopole Detector, (with J. Incandela and S. Somalwar), Phys. Rev. **D34**, 2637 (1986).
27. Production of Massive Muon Pairs in  $\pi^-$ -Nucleus Collisions, (with H. Greenlee et al.), Phys. Rev. Lett. **55**, 1555 (1985).

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26. Flux Limit on Cosmic-Ray Magnetic Monopoles from a Large Area Induction Detector, (with M. Campbell et al.), Phys. Rev. Lett. **53**, 2067 (1984).
25. Series-Parallel Gradiometers for Monopole Detectors, (with S. Somalwar, J. Incandela, and M. Kuchnir), Nucl. Instr. and Meth., **226**, 341 (1984).
24. The Atomic Mass Dependence of the Transverse Momentum Distribution of Massive Muon Pairs from 225 GeV/c  $p^-$ -Nucleus Collisions, (with M. Swartz et al.), Phys. Rev. Lett. **53**, 32 (1984).
23. The Inclusive Production of Hadrons at High  $P_T$  in 200 and 300 GeV  $\pi$ -p and  $\pi$ -N Collisions, (with N. Giokaris et al.), Phys. Rev. **D27**, 1001 (1983).
22. Atomic-Weight Dependence of Muon-Pair Production in 225 GeV/c  $\pi^-$ -Nucleus Interactions, (with N. Giokaris et al.), Phys. Rev. **D25**, 2000 (1982).
21. Comparison of the Production of Charged Hadrons at Large Transverse Momentum in  $\pi$ -p and pp Collisions, (with N. Giokaris et al.), Phys. Rev. Lett. **47**, 1690 (1981).
20. The Production of  $\pi^\pm$ ,  $K^\pm$ , p and  $\bar{p}$  at Large  $P_T$  in 200 and 300 GeV  $\pi$ -p Collisions, (with N. Giokaris et al.), Phys. Rev. Lett. **44**, 511 (1980).
19. Measurement of the Decay Rate for the Process  $K_L^0 \rightarrow \mu^+\mu^-$ , (with M. Shochet et al.), Phys. Rev. **D19**, 1965 (1979).
18. Production of Hadrons at Large Transverse Momentum in 200, 300, and 400 GeV  $\pi$ -p and  $\pi$ -nucleus Collisions, (with D. Antreasyan et al.), Phys. Rev. **D19**, 764 (1979).
17. Test of Scaling in Muon-Pair Production by Hadrons, (with D. Antreasyan et al.), Phys. Rev. Lett. **39**, 906 (1977).
16. Search for Quarks Produced with Large Transverse Momentum in 400-GeV Proton-Nucleus Collisions, (with D. Antreasyan et al.), Phys. Rev. Lett. **39**, 512 (1977).
15. Measurement of the Decay Rate for the Rare Process  $K^0 \rightarrow \mu^+\mu^-$ , (with M. Shochet et al.), Phys. Rev. Lett. **39**, 59 (1977).
14. Measurement of the Branching Ratio  $\Gamma(K_L^0 \rightarrow \pi^+\pi^-)/\Gamma(K_L^0 \rightarrow \text{all})$ , (with R. Devoe et al.), Phys. Rev. **D16**, 565 (1977).
13. Atomic-Number Dependence of Large-Transverse-Momentum Hadron Production by Protons, (with L. Kluberg et al.), Phys. Rev. Lett. **38**, 670 (1977).
12. Production of Kaons, Protons and Antiprotons with Large Transverse Momentum in p-p and p-d Collisions at 200, 300, and 400 GeV, (with D. Antreasyan et al.), Phys. Rev. Lett. **38**, 115 (1977).
11. Production of  $\pi^+$  and  $\pi^-$  at Large Transverse Momentum in p-p and p-d Collisions at 200, 300, and 400 GeV, (with D. Antreasyan et al.), Phys. Rev. Lett. **38**, 112 (1977).
10. Production of Massive Muon Pairs by 300 and 400 GeV Protons, (with L. Kluberg et al.), Phys. Rev. Lett. **37**, 1451 (1976).
9. Measurement of Direct Muon Production in the Forward Direction, (with D. Buchholz et al.), Phys. Rev. Lett. **36**, 932 (1976).
8. Production of Hadrons at Large Transverse Momentum at 200, 300 and 400 GeV, (with J. Cronin et al.), Phys. Rev. **D11**, 3105 (1975).
7. Search for Massive Penetrating Particles Produced by 300 GeV Protons, (with J. Cronin et al.), Phys. Rev. **D10**, 3093 (1974).
6. Observation of Large Transverse Momentum Muons Directly Produced by 300 GeV Protons, (with J. Cronin et al.), Phys. Rev. Lett. **33**, 112.
5. Production of Hadrons with Large Transverse Momentum at 200 and 300 GeV, (with J. Cronin et al.), Phys. Rev. Lett. **31**, 1426 (1973).

4. Search for Fine Structure in the  $K_L^0$  Final States, *Nature* **237**, (with A. Clark et al.), 338 (1973).
3. Neutrino Mass Limits from the  $K_L^0 \rightarrow \pi^\pm e^\pm \nu$  Decay Spectrum, (with A. Clark et al.), *Phys. Rev.* **D3**, 533 (1972).
2. Observed Difference in the Range of Positive and Negative Muons, (with A. Clark et al.), *Phys. Letters* **41B**, 229 (1972).
1. A Search for the Decays  $K_L^0 \rightarrow \mu^+ \mu^-, e^+ e^-, \mu^\pm e^\pm$ , (with A. Clark et al.), *Phys. Rev. Lett.* **26**, 1661 (1971).

## 2 Other Publications:

Refereed papers for which I made a significant contribution but was not a primary author (Partial list).

123. “Measurement of the  $B_0(s)$  - anti- $B_0(s)$  Oscillation Frequency”; CDF Collaboration (A. Abulencia et al.); *Phys.Rev.Lett.*97:062003,2006;
122. “Observation of  $B_0(s)$  - anti- $B_0(s)$  Oscillations”; CDF Collaboration (A. Abulencia et al.); *Phys.Rev.Lett.*97:242003,2006;
121. “Search for W and Z Bosons in the Reaction anti-p p  $\rightarrow$  2 jets + gamma at  $s^{**}(1/2) = 1.8\text{-TeV}$ ”; [CDF Collaboration (D. Acosta et al.)]; *Phys.Rev.D*73:012001,2006
120. “Search for Higgs Bosons Decaying into b anti-b and Produced in Association with a Vector Boson in p anti-p Collisions at 1.8-TeV”; [CDF Collaboration (D. Acosta et al.)]; *Phys.Rev.Lett.*95:051801,2005
119. “Measurement of the Forward-backward Charge Asymmetry of Electron-positron Pairs in anti-p p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$ ”; [CDF Collaboration (D. Acosta et al.)]; *Phys.Rev.D*71:052002,2005
118. “Search for anomalous production of diphoton events with missing transverse energy at CDF and limits on gauge-mediated supersymmetry-breaking models”; [CDF Collaboration (D. Acosta et al.)]; *Phys.Rev.D*71:031104,2005
117. “Measurement of the t anti-t Production Cross Section in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$  Using Lepton + jets Events with Secondary Vertex b-tagging”; [CDF Collaboration (D. Acosta et al.)]; *Phys.Rev.D*71:052003,2005
116. “Search for Excited and Exotic Electrons in the e gamma Decay Channel in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$ ”; [CDF Collaboration (D. Acosta et al.)]; *Phys.Rev.Lett.*94:101802,2005
115. “Measurement of W gamma and Z gamma Production in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$ ”; [CDF II Collaboration (D. Acosta et al.)]; *Phys.Rev.Lett.*94:041803,2005
114. “Measurement of the t anti-t Production Cross Section in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$  Using Kinematic Fitting of b-tagged Lepton + jet Events”; [CDF-II Collaboration] (D. Acosta et al.); *Phys.Rev.D*71:072005,2005
113. “First Measurements of Inclusive W and Z Cross Sections From Run II of the Tevatron Collider,”; with D. Acosta *et al.* [CDF II Collaboration]; *Phys. Rev. Lett.* **94**, 091803 (2005)
112. “Measurement of the Forward-backward Charge Asymmetry of Electron Positron Pairs in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$ ,”; with D. Acosta *et al.* [CDF Collaboration]; *Phys. Rev. D* **71**, 052002 (2005)
111. “Search for Higgs Bosons Decaying Into b anti-b and Produced In Association With a Vector Boson in proton antiproton Collisions at  $s^{**}(1/2) = 1.8\text{-TeV}$ ”; D. Acosta *et al.* [CDF Collaboration]; *Phys. Rev. Lett.* **95**, 051801 (2005)
110. Measurement of the t anti-t Production Cross Section in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$  Using Dilepton Events; CDF Collaboration (D. Acosta et al.); *Phys.Rev.Lett.*93:142001,2004
109. Search for  $B_S^0 \rightarrow \mu^+ \mu^-$  and  $B_D^0 \rightarrow \mu^+ \mu^-$  Decays in p anti-p Collisions at  $s^{**}(1/2) = 1.96\text{-TeV}$ ; CDF Collaboration (D. Acosta et al.); *Phys.Rev.Lett.*93:032001,2004
108. “Combination of CDF and D0 Results on W Boson Mass and Width,”; with V. M. Abazov *et al.* [CDF Collaboration]; *Phys. Rev. D* **70**, 092008 (2004)

107. Search for the Flavor Changing Neutral Current Decay  $D^0 \rightarrow \mu^+ \mu^-$  in p anti-p Collisions at  $\sqrt{s} = 1.96$ -TeV. CDF Collaboration (D. Acosta et al.); Phys.Rev.D68:091101,2003
106. Measurement of the Mass Difference  $m(D_s^+) - m(D^+)$ ; (Bill Ashmanskas and Paul Harr, lead authors: The CDF II Collaboration); Phys.Rev.D68:072004,2003
105. Comparison of the Isolated Direct Photon Cross Sections at  $\sqrt{s}=1.8$  TeV and  $\sqrt{s}=0.63$  GeV; (Dana Partos and Stephen Kuhlmann, lead authors: The CDF Collaboration); Phys.Rev. D65 (2002) 112003
104. Search for Gluinos and Scalar Quarks in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV using the Missing Energy plus Multijets Signature; (M. Spiropulu, lead author: The CDF Collaboration); Phys. Rev. Lett. **88**, 041801(2002).
103. Cross-section and heavy quark composition of gamma + muon events produced in p anti-p collisions; (Koichi Kurino and Stephen Kuhlmann, lead authors: The CDF Collaboration); Phys.Rev.**D65**, 012003(2001).
102. Measurement of the Top Quark Mass with the Collider Detector at Fermilab; (with the CDF Collaboration); Phys.Rev.**D63**, 032003(2001).
101. Kinematics of  $t\bar{t}$  Events at CDF, The CDF Collaboration (with F. Abe et al.), Phys. Rev.**D59**, 092001 (1999).
100. Measurement of  $Z^0$  and Drell-Yan Production Cross-Section Using Dimuons in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev.**D59**, 052002(1999).
99. Search for R Parity Violating Supersymmetry Using Like Sign Dielectrons in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **83**, 2133-2138 (1999).
98. Search for Third Generation Leptoquarks from Technicolor Models in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **82**, 3206 (1999).
97. Search for Long Lived Parents of  $Z^0$  Bosons in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D58**, 051102 (1998).
96. A Measurement of the Lepton Charge Asymmetry in W Boson Decays Produced in  $p\bar{p}$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **81**, 5754-5759 (1998).
95. Measurement of the  $\sigma(W+ \geq 1Jet)/\sigma(W)$  Cross-Section Ratio from  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **81**, 1367-1372 (1998).
94. Search for the Rare Decay  $W^\pm \rightarrow D^\pm(S)\gamma$  in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration, (with F. Abe et al.), Phys. Rev. **D58**, 091101 (1998).
93. Search for the Rare Decay  $W^\pm \rightarrow \pi^\pm + \gamma$  in Proton - Anti-Proton Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **D58**, 031101 (1998).
92. Search for Chargino-Neutralino Associated Production at the Fermilab Tevatron Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **80**, 5275-5280 (1998).
91. The Jet Pseudorapidity Distribution in Direct Photon Events in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D57**, 1359 (1998).
90. Observation of Hadronic W Decays in  $t\bar{t}$  Events with the Collider Detector at Fermilab, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **80**, 5720-5725 (1998).
89. Search for Flavor-Changing Neutral Current Decays of the Top Quark in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **80**, 2525 (1998).
88. Measurement of the Differential Cross-Section for Events with Large Total Transverse Energy in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **80**, 3461 (1998).
87. Dijet Production by Color-Singlet Exchange at the Fermilab Tevatron, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **80**, 1156 (1998).
86. Properties of Photon Plus Two-Jet Events in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D57**, 67 (1998).

85. Limits on Quark-Lepton Compositeness Scales from Dileptons Produced in 1.8 TeV  $p\bar{p}$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 2198 (1997).
84. Search for New Gauge Bosons Decaying into Dileptons in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 2192 (1997).
83. Properties of Jets in W Bosons Events from 1.8 TeV  $\bar{p}p$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 4760 (1997).
82. Double Parton Scattering in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D56**, 3811 (1997).
81. Evidence for  $W^+W^-$  Production in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **78**, 4536 (1997).
80. Properties of Six-Jet Events with Large Six-Jet Mass at the Fermilab Proton-Antiproton Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D56**, 2532 (1997).
79. Measurement of Double Parton Scattering in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 584 (1997).
78. Search for Gluinos and Squarks at the Fermilab Tevatron Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D56**, R1357 (1997).
77. Search for Third Generation Leptoquarks in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **78**, 2906 (1997). F. Abe et al.).
76. Measurement of Dijet Angular Distributions by the Collider Detector at Fermilab, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **77**, 5336 (1997).
75. Search for Charged Higgs Boson Decays of the Top Quark Using Hadronic Decays of the Tau Lepton, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **79**, 357 (1997).
74. Observation of Diffractive W-Boson Production at the Fermilab Tevatron, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **78**, 2698 (1997).
73. Search for New Particles Decaying to Dijets at CDF, Phys. Rev. **D55**, R5263 (1997) (with F. Abe et al.).
72. Observation of Diffractive W-Boson Production at the Fermilab Tevatron, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **78**, 2698 (1997).
71. Measurement of the  $\gamma + D^{*\pm}$  Cross Section in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **77**, 5005 (1996).
70. Further Properties of High-Mass Multijet Events at the Fermilab Proton-Antiproton Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D54**, 4221 (1996).
69. Search for Charged Higgs Boson Decays of the Top Quark Using Hadronic  $\tau$  Decays, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D54**, 735 (1996).
68. Search for Chargino-Neutralino Production in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **76**, 4307 (1996).
67. Properties of Jets in Z Boson Events from 1.8 TeV  $\bar{p}p$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **77**, 448 (1996).
66. Inclusive Jet Cross Section in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **77**, 438 (1996).
65. Search for the Rare Decay  $W^\pm \rightarrow \pi^\pm + \gamma$ , The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **76**, 2852 (1996).
64. Search for Gluino and Squark Cascade Decays at the Fermilab Tevatron Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **76**, 2006 (1995).

63. Study of  $t\bar{t}$  Production in  $p\bar{p}$  Collisions Using Total Transverse Energy, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **75**, 3997 (1995).
62. Identification of Top Quarks Using Kinematic Variables, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D52**, R2605 (1995).
61. Limits on WWZ and WW $\gamma$  Couplings from WW and WZ Production in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **75**, 1017 (1995).
60. Search for Second Generation Leptoquarks in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **75**, 1012 (1995).
59. Search for Squarks and Gluinos via Radiative Decays of Neutralinos in Proton-Antiproton Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **75**, 613 (1995).
58. Properties of High-Mass Multijet Events at the Fermilab Proton-Antiproton Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **75**, 608 (1995).
57. Kinematic Evidence for Top Quark Pair Production in W + Multijet Events in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D51**, 4623 (1995).
56. Search for New Particles Decaying to Dijets in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **74**, 3538 (1995).
55. Limits on Z-Photon Couplings from  $p - \bar{p}$  Interactions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **74**, 1941 (1995).
54. Measurement of W-Photon Couplings in  $p - \bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **74**, 1936 (1995).
53. Observation of Rapidity Gaps in  $p\bar{p}$  Collisions at 1.8 TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **74**, 855 (1995).
52. Charge Asymmetry in W-Boson Decays Produced in  $p\bar{p}$  at 1.8 TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **74**, 850 (1995).
51. Evidence for Color Coherence in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D50**, 5562 (1994).
50. Measurement of the B Meson and b Quark Cross Sections at  $\sqrt{s} = 1.8$  TeV Using the Exclusive Decay  $B^0 \rightarrow J/\psi K^*(892)^0$ , The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D50**, 4252 (1994).
49. Precision Measurement of the Prompt Photon Cross Section in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **73**, 2662 (1994).
48. W Boson + Jet Angular Distribution in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **73**, 2296 (1994).
47. Measurement of the  $B^+$  and  $B^0$  Meson Lifetimes, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **72**, 3456 (1994).
46. Search for the Top Quark Decaying to a Charged Higgs Boson in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **72**, 1977 (1994).
45. Measurement of the Average Lifetime of B Hadrons Produced in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 3421 (1993).
44. Search for First-Generation Leptoquarks in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D48**, R3939 (1993).
43. Search for Quark Compositeness, Axiguons, and Heavy Particles Using the Dijet Invariant Mass Spectrum Observed in  $p\bar{p}$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 2542 (1993).
42. Inclusive  $\chi_c$  and b- Quark Production in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 2537 (1993).

41. Measurement of Bottom Quark Production in 1.8 TeV  $p\bar{p}$  Collisions Using Muons from b-Quark Decays, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 2396 (1993).
40. Prompt Photon Cross Section Measurement in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D48**, 2298, (1993).
39. Observation of the Decay  $B_s^0 \rightarrow J/\psi\phi$  in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 1685 (1993).
38. Measurement of the Dijet Mass Distribution in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D48**, 998 (1993).
37. Center-of-Mass Angular Distribution of Prompt Photons Produced in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 679 (1993).
36. Measurement of the Bottom-Quark Production Cross Section Using Semileptonic Decay Electrons in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **71**, 500 (1993).
35. Measurement of Jet Multiplicity in W Events Produced in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **70**, 4042 (1993).
34. Study of Four-Jet Events and Evidence for Double Parton Interactions in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D47**, 4857 (1993).
33. Search for  $\Lambda_b \rightarrow J/\psi\Lambda^0$  in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D47**, R2639 (1993).
32. Measurement of the Cross Section for Production of Two Isolated Prompt Photons in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **70**, 2232 (1993).
31. Comparison of Jet Production in  $\bar{p}p$  Collisions at  $\sqrt{s} = 546$  and 1800 GeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **70**, 1376 (1993).
30. Measurement of Jet Shapes in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **70**, 713 (1993).
29. Limit on the Top-Quark Mass in Proton-Antiproton Collisions at  $\sqrt{s} = 1800$  GeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D45**, 3921 (1992).
28. Lower Limit on the Top Quark Mass from Events with Two Leptons in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 447 (1992).
27. Limits on the Production of Massive Stable Charged Particles, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D46**, R1889 (1992).
26. Inclusive  $J/\psi$ ,  $\psi(2S)$  and b-quark Production in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **69**, 3704 (1992).
25. Dijet Angular Distribution in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **69**, 2896 (1992).
24. Limit on the Rare Decay  $W^\pm \rightarrow \gamma\pi^\pm$  in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **69**, 2160 (1992).
23. Search for Squarks and Gluinos from  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **69**, 3439 (1992).
22. Measurement of the B-Meson and b-Quark Cross Sections at  $\sqrt{s} = 1.8$  TeV Using the Exclusive Decay  $B^\pm \rightarrow J/\psi K^\pm$  The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 3403 (1992).
21. Lepton Asymmetry in W-Boson Decays from  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 1458 (1992).
20. Topology of Three-Jet Events in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D45**, 1448 (1992).

19. Properties of Events with Large Total Transverse Energy Produced in Proton-Antiproton Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D45**, 2249 (1992).
18. Measurement of the Isolated Prompt Photon Cross Section in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 2734 (1992).
17. Top Quark Search in the Electron + Jets Channel in Proton-Antiproton Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D43**, 664 (1991).
16. Inclusive Jet Cross Section in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **68**, 1104 (1991).
15. Measurement of  $B^0\bar{B}^0$  Mixing at the Fermilab Tevatron Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **67**, 3351 (1991).
14. Measurement of the Z-Boson  $p_T$  Distribution in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **67**, 2937 (1991).
13. Determination of  $\sin^2\bar{\theta}_w$  from the Forward-Backward Asymmetry in  $p\bar{p} \rightarrow Z^0 X \rightarrow e^+e^- X$  Interactions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **67**, 1502 (1991).
12. Measurement of the W-Boson  $P_T$  Distribution in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **66**, 2951 (1991).
11. Jet-Fragmentation Properties in  $\bar{p}p$  Collisions  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **65**, 968 (1990).
10. Search for a Light Higgs Boson at the Fermilab Tevatron Proton-Antiproton Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D41**, 1717 (1990).
9. Search for New Heavy Quarks in Electron-Muon Events at the Fermilab Tevatron Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **64**, 147 (1990).
8. Two-Jet Differential Cross Section in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **64**, 157 (1990).
7.  $K_S^0$  Production in  $\bar{p}p$  Interactions at  $\sqrt{s} = 630$  and 1800 GeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. **D40**, 3791 (1989).
6. Search for Heavy Stable Charged Particles in 1.8-TeV  $p\bar{p}$  Collisions at the Fermilab Collider, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **63**, 1447 (1989).
5. Dijet Angular Distributions from  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **62**, 3020 (1989).
4. Limits on the Masses of Supersymmetric Particles from 1.8-TeV  $p\bar{p}$  Collisions, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **62**, 1825 (1989).
3. Measurement of the Inclusive Jet Cross Section in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **62**, 613 (1989).
2. Transverse Momentum Distributions of Charged Particles Produced in  $\bar{p}p$  Collisions at  $\sqrt{s} = 630$  and 1800 GeV, The CDF Collaboration (with F. Abe et al.), Phys. Rev. Lett. **61**, 1819 (1988).
1. **End of ‘Other Publications’- see Primary Publications above**

### 3 Conference Proceedings

(Partial list)

Instrumentation is largely documented through papers and posters submitted to and accepted for presentation at the IEEE NSS-MIC and Real-Time conferences, the Pisa detector series, and others with proceedings.

27. A. Elagin, E. Angelico, H. J. Frisch, E. Spiegler, R. Jarrett (Indium Corporation of America); *LAPPD Hermetic Packaging Using an Indium Solder Flat Seal*; SORMA 2016, Berkeley CA, May 2016
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
23. H. Frisch, R. Wagner, A. Mane, J. Elam, and G. Varner; *Large Area Flat Panel Photon Counting Imaging Detectors for Astronomy and Night Time Sensing*; Proceedings of the Advanced Maui Optical and Space Surveillance Technologies Conference (AMOS); Maui, HA, Sept. 2013;  
www.amostech.com/technicalpapers/2013/poster/siegmund.pdf
22. “An Application of Micro-Channel Plate Photomultiplier Tube to Positron Emission Tomography”; with H. Kim, C.-T. Chen, F. Tang, C.-M. Kao; TIPP2011; Physics Procedia, Vol37, 1 (2012)
21. H. Kim, C.-T. Chen, H. Frisch, F. Tang, C.-M. Kao; “A Prototype TOF PET Detector Module Using a Micro-Channel Plate Photomultiplier Tube with Waveform Sampling”  
Nuclear Instruments and Methods in Physics Research A 662 (2012) 26-32
20. “A Prototype PET Detector Module using Micro-channel Plate Photomultiplier Tubes with Waveform Sampling”  
with H. Kim, C-M Kao, C-T Chen, J.-F. Genat, and Fukun Tang;  
Proceedings of the 2010 IEEE Nuclear Science Symposium and Medical Imaging, pp. 2750-2753. Knoxville Tenn., 2010
19. “Use of Flat Panel Micro-channel Photomultipliers in Sampling Calorimeter with Timing”, Conference Record of the 2010 IEEE Nuclear Science Symposium and Medical Imaging, pp. 1707-1710. Knoxville Tenn., Oct. 2010
18. “A Design of a PET Detector Using Micro-Channel Plate Photo-Multipliers with Transmission-Line Readout”;  
with H. Kim, C.-T. Chen J.-F. Genat, F. Tang, W.W. Moses, W. S. Choong, and C.-M. Kao;  
Nucl. Inst. and Meth. A622, p628 (2010)  
2009 IEEE Nuclear Science Symposium Conference Record
17. “A Multi-Threshold Sampling Method for TOF PET Signal Processing”, with H. Kim, C.-M. Kao, Q. Xie, C.-T. Chen, L. Zhou, F. Tang, W.W. Moses, W.S. Choong;  
Nucl. Instr. Meth. in Physics Research, A, 602, p. 618, 2009.
16. “Development of Picosecond-resolution Large-area Time-of-flight Systems”;  
with C. Ertley, J. Anderson, K. Byrum, G. Drake, Henry Frisch, J.-F. Genat, H. Sanders, F. Tang;  
IEEE Trans.Nucl.Sci.56:1042,2009.
15. “A Design of a PET Detector using Micro-channel plate PMTs with Transmission Line Readout”,  
with H. Kim, C.-M. Kao, W.W. Moses, W.-S. Choong, J.-F. Genat, F. Tang, and C.-T. Chen



- ; Conference Record of the 2009 IEEE Nuclear Science Symposium and Medical Imaging, Orlando Fla., Oct. 2009; pp. 3106-3110.
14. "Continuous Scintillator Slab with Micro-channel plate PMT for PET",  
with H. Kim, C.-M. Kao, W.W. Moses, W.-S. Choong, J.-F. Genat, F. Tang, and C.-T. Chen,  
Conference Record of the 2009 IEEE Nuclear Science Symposium and Medical Imaging, Orlando Fla., Oct.  
2009; pp. 2553-2556
  13. "Level-3 Calorimetric Resolution available for the Level-1 and Level-2 CDF Triggers";  
Anadi Canepa et al. (CDF Collaboration); FERMILAB-CONF-08-655-PPD, PIC-2008-0040, Jun 2008;  
Proceedings of 28th Physics in Collision (PIC 2008), Perugia, Italy, 25-28 Jun 2008, p. 40.
  12. "Transmission-line readout with good time and space resolutions for Planacon MCP-PMTs";  
with F. Tang, J. Anderson, K. Byrum, G. Drake, C. Ertley, J.-F. Genat, E. May.  
CERN-2008-008, 'Naxos 2008, Electronics for Particle Physics' p. 579
  11. "New Developments in Fast-Sampling Analog Readout of MCP-Based Large-Area Picosecond Time -of-  
Flight Detectors"  
J. Anderson, K. Byrum, G. Drake, C. Ertley, H. Frisch, J.-F. Genat, E. May, D. Salek and F. Tang;  
IEEE-MIC 2008, ID-2973 IEEE08, October, 2008; Dresden Germany
  10. "Transmission-Line Readout with Good Time and Space Resolutions for a Planicon MCP-PMT";  
Fukun Tang et al.;  
Poster presented at the Topical Workshop on Electronics for Particle Physics (TWEPP), Prague, Czech  
Republic, Sept., 2007.
  9. "Development of a Front-End Electronics for Pico-second Resolution.";  
G. Drake, K. Karen (Argonne) , Henry J. Frisch, H. Sanders, f. Tang (Chicago U., EFI).  
15th IEEE Real Time Conference 2007, Batavia, Illinois (Apr 2007); C07-04-29 Proceedings
  8. "The CDF Level 2 Trigger Upgrade", K. Anikeev et al.;  
IEEE Trans.Nucl.Sci.53:653-658,2006
  7. Picosecond Time-of-Flight Measurement for Colliders Using Cherenkov Light; with T. Credo, H. Sanders,  
R. Schroll, and F. Tang; proceedings of the IEEE, Rome, Italy, Oct. 2004; Nuclear Science Symposium  
Conference Record, 2004 IEEE, Volume: 1 Date: 16-22 Oct. 2004
  6. "Virtual Prototype Method Used in Design of Electronic Circuitry for CDF,"; with W. Ashmanskas, M. Bog-  
dan, T. Liu, H. Sanders and M. Shochet; Nucl. Instrum. Meth. A **518**, 491 (2004).
  5. Initial Experience with the CDF SVT trigger, Nucl. Instr. Meth. 501, 1:21, March 2003, P. 201-206  
(with B. Ashmanskas, A. Barchiesi, A. Bardi, M. Bari, M. Baumgart, Stefano Belforte, J. Berryhill, M.  
Bogdan, R. Carosi, A. Cerri et al.).
  4. The Programmable Analog Circuitry of the CDF Trigger, (with H. Sanders et al.), IEEE Trans. Nucl. Sci.  
**33**, 862-865 (1986).
  3. CAD Based Standard ECL Fastbus Interface, (with D. Amidei et al.), Nucl. Sci. Symp. 817 (1985).
  2. A Simple Fastbus Blower; H. Frisch;  
Nucl. Sci. Symp. 835 (1985).
  1. The Trigger System for the Collider Detector Facility, (with D. Amidei et al.), EFI-85-81-CHICAGO, Nucl.  
Sci. Symp. 63 (1985).

## 4 Patents

### 1. LAPPD TOF patent

*Large Area, Pico-second Resolution, Time of Flight Detectors;*

US Patent 7,485,872; filed Oct. 19, 2006

Henry J. Frisch, Harold Sanders, Fukun Tang, Tim Credo, Inventors

### 2. AAO patent

*Anodized Aluminum Oxide With Atomic Layer Deposition As Micro-plate Detector*

US Patent Number 9,139,905. Issued September 22, 2015. Inventors: Jeffrey W. Elam, Hsien-Hau Wang,

Michael J. Pellin, Karen Byrum, Henry J. Frisch

### 3. Sampling Calorimeter patent

*Use of Flat Panel Microchannel Photomultipliers in Sampling Calorimeters with Timing*

US patents 8,604,440, filed 3/9/2011; 9,243,180 filed 11/26/2013; 9,625,588 filed 12/29/2015

Chin-Tu Chen, Woon-Seng Choong, Henry J. Frisch, Jean-Francois Genat, Chien-Min Kao, Heejong Kim, and Fukun Tang, Inventors

### 4. Alkali photocathode patent

*Alkali Semi-Metal Films and Method and Apparatus for Fabricating Them*

US Patent 9,916,958, filed Jan 30, 2014; Divisional Application 15/884,947 filed 1/31/2018 (pending)

Harish Bhandari; Vivek Nagarkar; Olena Ovechkina; Henry J. Frisch;

Klaus Attenkofer; John M. Smedley, Inventors

### 5. PET patent

*Positron-emission Tomography Detector Systems Based on Low-density Liquid Scintillators and Precise Time-resolving Photodetectors*

U.S. Patent 10,132,942, filed April 8, 2016

Henry J. Frisch, Eric J. Oberla, Hee-Jong Kim, Minfang Yeh, Inventors

### 6. Batch Reflection Mode Photocathode patent

*Batch Production of Microchannel Plate Photo-Multipliers with Reflection-Mode Photocathodes;*

Henry J. Frisch; Matthew Wetstein; Andrey Elagin; Inventors

US Patent 9,911,584, filed March 24, 2017

### 7. Seal patent

*Methods of Fabricating Vacuum Housing with Hermetic Solder Seals Using Capillary Wicks;*

US Patent 62/831,474, filed March 19, 2019 (Pending)

Eric Spieglan; Evan Angelico; Andrey Elagin; Henry J. Frisch, Inventors

### 8. AirTransfer Batch patent

*Dual Low Vacuum-UltraHigh Vacuum System for Large-Scale Production of Micro-Channel Plate Photomultipliers;*

US Patent 62928598; filed Oct. 31, 2019 (Pending)

Evan Angelico; Eric Spieglan; Andrey Elagin; Henry Frisch; Bernhard Adams, Inventors

### 9. Switchillator PET patent

*Positron Emission Tomography Systems Based on Ionization-Activated Organic Fluor Molecules* US Provisional 63/106,665; 21-T-019;

Henry Frisch, Evan Angelico, Bernhard Adams, Eric Spieglan, Joao Shida, Andrey Elagin, Patrick La Riviere

Pending; 10/28/2020

## 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.

1. Asymmetry in  $W \rightarrow \text{Lepton} + \text{Neutrino}$  Decays, CDF Note Number: 0100.

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.
6. Specifications for Level 3 (with E. Barsotti, A. Brenner, T. Carroll, C. Day, and R. Perchonok), CDF Note Number: 0278.
7. CDF Upgraded Forward Muon Coverage and Integrated Dipole-TRD (with M. Atac, D. Theriot, D. Carlsmith, and D. Cline), CDF Note Number: 0332.
8. CDF Fred Functional Specifications (with M. Campbell, M. Dell'orso, P. Giannetti, and C. Grosso-Pilcher), CDF Note Number: 0364.
9. The Trigger System for the Collider Detector Facility (with D. Amidei, M. Campbell, and C. Grosso-Pilcher), CDF Note Number: 0375.
10. Performance of Beam-Beam Counter in 1985 Run (with T. Kamon and T. Liss), CDF Note Number: 0416.
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.
14. A Two Level Fastbus Based Trigger System for CDF (with D. Amidei, M. Campbell, C. Grosso-Pilcher, J. Hauser, T. Liss, G. Redlinger, A. Roodman, H. Sanders, M. Shochet, J. Ting, Y.D. Tsai, M. Dell'orso, P. Giannetti, and L. Ristori), CDF Note Number: 0510.
15. Data Reduction for a Missing  $E_T$  Sample (with L. Nodulman, B. Esposito, M. Curatolo, S. Hahn, and R. Plunkett), CDF Note Number: 0561, 10/27/87.
16. A Measurement of IVB Production in 1.8 TeV Collisions by Missing  $E_T$  (with L. Nodulman, D. Amidei, M. Contreras, M. Curatolo, B. Esposito, S. Hahn, R. Plunkett, M. Shibata, and R.G. Wagner), CDF Note Number: 0614, 2/15/88.
17. Top Pair Total Cross Sections (with B. Hollebeek and P. Sinervo), CDF Note Number: 0656, 4/18/88.
18. The Change in Top Cross Sections in Going from  $\sqrt{s} = 1.8$  TeV to 2.0 TeV (with B. Hollebeek and P. Sinervo), CDF Note Number: 0657, 4/18/88.
19. Main Ring Splash Monitoring and the MR Counters Inhibit (with E. Meschi and A. Tollestrup), CDF Note Number: 0764, 9/30/88.
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.
21. 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.
22. Comments on the Forward Energy Scale Using Central-Forward Z's (with P. Derwent, C. Campagnari, and M. Miller), CDF Note Number: 1038, 10/9/89.
23. Investigation of Charge Asymmetry in Lepton Pairs Above the Z Mass (with P. Derwent), CDF Note Number: 1085, 12/5/89.
24. Measurement of  $\sigma(W \rightarrow e\nu)$  and  $\sigma(Z \rightarrow ee)$  in  $\bar{p}p$  Collisions at  $\sqrt{s} = 1.8$  TeV (with C. Campagnari, P. Derwent, C. Grosso-Pilcher, and M. Miller), CDF Note Number: 1107, 1/4/90.

25. A Proposal for a Superspin, CDF Note Number: 1168, 4/14/90.
26. Can We Write More Events to Tape Next Run?, CDF Note Number: 1258, 7/16/90.
27. A Standard Data Sample for  $W \rightarrow \mu\nu$  and  $Z \rightarrow \mu^+\mu^-$  Analysis (with A. Byon-Wagner, S. Eno, C. Grosso-Pilcher, D. Smith, D. Kardelis, and R. Swartz), CDF Note Number: 1263, 7/18/90.
28. A Study of the Associated Event in W and Z Production (with A. Byon-Wagner and R. Snider), CDF Note Number: 1265, 7/18/90.
29. Recent Results from Hadron Colliders (with The CDF Collaboration), CDF Note Number: 1326, Published in Proceedings of PANIC XII, Massachusetts Institute of Technology, Cambridge, MA, June 25-29, 1990, 12/9/90.
30. The W and Z Underlying Event Analysis (with A. Byon-Wagner, S. Eno, and R. Snider), CDF Note Number: 1416, 4/9/91.
31. Trigger and Physics Cross-Sections for the 1991 Run (with R. Blair, M. Contreras, C. Campagnari, A. Gauthier, S. Geer, C. Grosso-Pilcher, J. Huth, J. Jensen, S. Kim, S. Kuhlmann, M. Miller, L. Pondrom, J. Romano, A. Roodman, M. Shapiro, P. Sinervo, et al.), CDF Note Number: 1467, 5/22/91.
32. CDF Data Storage and Analysis Modifications (with B. Blair, P. Berge, M. Contreras, S. Errede, B. Flaugh, M. Franklin, A. Gauthier, M. Gold, J. Huth, R. Harris, S. Kuhlmann, M. Miller, A. Mukherjee, C. Newman-Holmes, L. Nodulman, and R. Plunkett), CDF Note Number: 1490, 6/20/91.
33. Electroweak Physics with CDF (with The CDF Collaboration), CDF Note Number: 1508, Pub. Proceedings Les Rencontres de Physique de la Vallee D'Aosta, La Thuile, Italy, March 4-9, 1991, 7/10/91.
34. Low Mass Drell-Yan in the Electron Channel (with K. Bloom, M. Contreras, and C. Grosso-Pilcher), CDF Note Number: 1622, 11/15/91.
35. Studies Regarding the Measurement of the Ratio of  $dN/d\eta$  in W Events (with S. Eno, S. Edner, and R. Snider), CDF Note Number: 1729, 4/13/92.
36. Conceptual Design of a Deadtimeless Trigger for the CDF Upgrade (with M. Campbell, G. Sullivan, and P. Wilson), CDF Note Number: 2038, 4/8/93.
37. Trigger Tower Organization and Summing in  $\eta - \phi$  Space for Run II and Beyond (with P. Wilson), CDF Note Number: 2045, 4/15/93.
38. Specifications for the Calorimeter Front-End Electronics (Preliminary) (with C. Campagnari, G. Drake, and C. Nelson), CDF Note Number: 2060, 4/27/93.
39. A First Look at 1992-93 Minimum Bias Data (with M. Hohlmann), CDF Note Number: 2115, 6/14/93.
40. A Model for Measuring the W Mass (with D. Saltzberg), CDF Note Number: 2165, 7/14/93.
41. CDF Results on Electroweak Physics (with The CDF Collaboration), CDF Note Number: 2240, Pub. Proceedings Vth Blois Workshop, Int. Conference on Elastic and Diffractive Scattering, Brown University, Providence, RI, 9/17/93.
42. A High-Statistics Look at Minimum Bias Data from Run 1A (with M. Hohlmann), CDF Note Number: 2313, 10/31/93.
43. CDF Electroweak Studies and the Search for the Top Quark (with The CDF Collaboration), CDF Note Number: 2404, Published Proceedings XXIII International Symposium on Multiparticle Dynamics, Aspen, CO, September 14, 1993. FERMILAB-CONF-94/044-E, 12/23/93.
44. Expression of Interest in a Future Collider Detector in B0 (with T. Devlin, N. Lockyer, D. Amidei, F. Bedeschi, K. Kondo, C. Newman-Holmes, M. Shapiro, W. Carithers, M. Shochet, and J. Cooper et al.), CDF Note Number: 2436, 1/23/94.
45. Expression of Interest in a Future B0 Detector: Supporting Documents (with T. Devlin, N. Lockyer, D. Amidei, F. Bedeschi, K. Kondo, C. Newman-Holmes, M. Shapiro, W. Carithers, M. Shochet, and J. Cooper et al.), CDF Note Number: 2437, 1/23/94.

46. The 970 GeV  $Z \rightarrow e^+e^- + 2$  Jets Event: Does it Have  $Z^0 \rightarrow p\bar{q}q + 2$  Jets Cousins? (with M. Contreras, C. Grosso-Pilcher, G. Sullivan, and D. Toback), CDF Note Number: 2483, 2/20/94.
47.  $\sigma_{Top}/\sigma_W$ :  $\sigma_W$  is Better to Normalize to Than  $\sigma_{BBC}$ , CDF Note Number: 2484, 2/20/94.
48. Combining W Mass Measurements (with M. Demarteau, U. Heintz, R. Keup, and D. Saltzberg), CDF Note Number: 2552, 4/13/94.
49. CP, C, and P Tests Beyond the W Pole, CDF Note Number: 2708, 7/13/94.
50. How to Run PHYSMON: Consumer Operator Instructions (with M. Hohlmann), CDF Note Number: 2748, 7/29/94.
51. A Test of T-Invariance Beyond the W Pole, CDF Note Number: 2832, 9/22/94.
52. Conceptual Design of the L1 Calorimeter Trigger for the Run II Upgrade (with M. Shochet, G. Sullivan, D. Toback, J. Wahl, and P. Wilson), CDF Note Number: 2909, 12/15/94.
53. A New Measurement of the W Mass, (with The CDF Collaboration), CDF Note Number: 3156, Pub. Proc. QCD and High Energy Inter. XXXth Rencontres de Moriond, Les Arcs, France, March 19-26, 1995, 5/24/95.
54. Acceptance for Top in the Dilepton Analysis (with M. Kruse, M. Hohlmann, J. Konigsberg and G. Sullivan), CDF Note Number: 3223, 6/26/95.
55. Separating Top and Z's in Dilepton Events Inside the Z Mass Window, CDF Note Number: 3387, 10/22/95.
56. Search for Cousins of the  $ee\gamma\gamma + met$  Event in the Diphoton Channel (with R. Culbertson, and D. Toback), CDF Note Number: 3456, 12/19/95.
57. 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.
58. 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.
60. Speculations on High-Mass Neutral Current Events (with J. Berryhill, R. Culbertson, D. Toback, and P. Wilson), CDF Note Number: 3556, 2/18/96.
61. Minimal ZOOSY: Four Events (with J. Berryhill, R. Culbertson, D. Toback, and P. Wilson), CDF Note Number: 3571, 2/24/96.
62. 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  $ee\gamma\gamma met$  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.
65. Update to CDF Note 3555: Search for Cousins of the  $ee\gamma\gamma met$  Event in the  $l\gamma met$  Channel (with J. Berryhill, R. Culbertson, D. Toback, and P. Wilson), CDF Note Number: 3851, 8/25/96.
66. Fake, Overlap, Cosmic Ray and Standard Model Estimates for the 'Pseudo- $ee\gamma\gamma met$ ' 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.

69. Setting Limits with  $\gamma\gamma + met$  Analysis (with D. Toback, J. Berryhill, and B. Blair), CDF Note Number: 4121, 3/28/97.
70. Searches for New Physics in Diphotons Events at  $\sqrt{s} = 1800$  GeV (with D. Toback, and B. Blair), CDF Note Number: 4149, 4/13/97.
71. Search for a Light Stop in Photon-Enriched SUSY (with J. Berryhill, R. Culbertson, M. Shochet, D. Toback, and P. Wilson), CDF Note Number: 4155, 4/22/97.
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.
73. SVT: An Online Silicon Vertex Tracker for the CDF Upgrade (with A. Aldarese, A. Bardi, S. Belforte, J. Berryhill, A. Cerri, A.G. Clark, R. Culbertson, M. Dell'Orso, S. Donati, J. Dusatko, S. Galeotti, P. Giannetti, A. Leger, E. Meschi, F. Morsani, T. Nakaya, G. Punzi, L. Ristori, H. Sanders, M. Shochet, T. Speer, F. Spinella, P. Wilson, X. Wu, and A.M. Zanetti), CDF Note Number: 4246, 7/10/97.
74. Some Additional Studies for  $W\bar{b}b$  Analysis (with W. Yao), CDF Note Number: 4285, 8/7/97.
75. The eegmett Candidate Event (with D. Toback, R. Culbertson, D. Stuart and F. Qun), CDF Note Number: 4304, 8/20/97.
76. Search for Anomalous High Mass Diphoton Production (with P. Wilson), CDF Note Number: 4338, 9/23/97.
77. Conceptual Design of the Global L1 Trigger Decision Crate for the Run II Upgrade (with A. Amadon, M. Shochet, J. Wahl, P. Wilson, G. Feild, and M. Schmidt), CDF Note Number: 4339, 9/23/97.
78. Limits on the Technicolor Omega from Events with a Photon and B-tag (with J. Berryhill, R. Culbertson, M. Shochet, D. Toback and P. Wilson), CDF Note Number: 4397, 11/19/97.
79. Thoughts on Luminosity for Run II, CDF Note Number: 4419, 12/8/97.
80. Search for a Higgs Decaying to Two Photons, (with P.J. Wilson), CDF Note Number: 4523, 3/11/98.
81. Criteria for Data Handling: CDF Physics Groups, (with J. Lamoreux, M. Lancaster, J. Lewis, S. Rolli, D. Stuart, S. Tkaczyk, K. Tollefson, B. Wicklund, and W. Yao), CDF Note Number: 4568, 4/28/98.
82. Specification of the XTRP, SVT, and Level 2 Interfaces, (with S. Belforte, J. Berryhill, R. Culbertson, M. Dell'Orso, P. Giannetti, T. Nakaya, E. Meschi, G. Punzi, L. Ristori, M. Shochet, F. Spinella, P.J. Wilson and A. Zanetti), CDF Note Number: 4578, 5/5/98.
83. 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.
85. CEM Phototube Base Modification for a TDC Dynode Output, (with R.G. Wagner), CDF Note Number: 4631, 6/10/98.
86. A Search for SUSY Cousins, (with J. Berryhill, R. Culbertson, D. Toback, and P.J. Wilson), CDF Note Number: 4662, 7/6/98.
87. Proposal to Instrument the Central and Plug EM Phototubes with TDCs, (with R. Wagner), CDF Note Number: 4694, 8/7/98.
88. 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.
90. 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.

92. 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.
98. 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  $W\gamma$  and  $Z\gamma$  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  $W^- \rightarrow WZ$  in the  $\nu\mu$ -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 Vaiculis),  
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),  
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  $\sqrt{s}=1.8$  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  $\sqrt{s}=1.8$  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 Heine-  
mann, 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 Ro-  
drigo, Rob Roser, Subir Sarkar, Mitchell Soderberg, Evelyn Thomson, Soushi Tsuno, Rocio Vilar and Collin



Wolfe),

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  $t$ - $t$ bar 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  $W$ + $b$ tags: Are we Calculating  $Wb\bar{b}$  and  $Wc\bar{c}$  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  $WN$ jets To  $ZN$ jets 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  $\tau \rightarrow \pi^+\pi^0$  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  $\gamma\gamma + e\text{ or } \mu$  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 linvfb  
 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  $t \rightarrow Zc$   
 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<sup>-1</sup> 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  $t \rightarrow Zc$   
 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. LAPPD lessons; Talk at DOE-HEP Multi-HEP Panel; CPAD; Nov. 9, 2020

2. Air-Transfer High-Volume Production of Large-area MCP-based Photodetectors; Talk at CPAD, Madison Wisc., Dec.8, 2019
3. Developing Charged Particle Time-of-Flight at the Fermilab Test Beam Facility Using Commercially Produced LAPPD TM modules; Talk at CPAD; Nov. 9, 2018; Providence RI
4. 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
5. The Psec/LAPPD program at Chicago; CPAD, Albuquerque NM; Oct. 13, 2017.
6. 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.
7. Jim, Hard Scattering, and the Parton Model; in memorial of James Cronin, Univ. of Chicago, Sept. 30, 2016.
8. The History of the LAPPD Collaboration; presented (by M. Wetstein) at the Univ. of Hawaii; July 20, 2015.
9. 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.
10. The Challenges and Applications of Sub-psec Large-area Detectors; TIPP, Amsterdam NH; June 5, 2014.
11. Prospects and Plans for LAPPDs: First Annie Collaboration Meeting.
12. Developing Large-Area Psec Photodetectors; 2nd Beijing Meeting.
13. Large-Area Psec Photodetectors: Applications and Development; Colloquium, IIT, April 11, 2013.
14. Three Years of LAPPD; DOE Review, Argonne, Dec. 18, 2012.
15. Development of Large-Area Psec Photodetectors; SLAC Seminar, June 20, 2012.
16. Development of Large-Area Psec Photodetectors; RealTime 2012, Berkeley Cal., June 11, 2012.
17. Electronics and System Integration for Large-Area, Pico-Second Photodetectors; SORMA\_West, Oakland Ca, May 17, 2012.
18. Ultra-fast Timing etc.; Light11, Ringwald Castle, Germany; Oct. 10, 2011.
19. ANT11 Neutrino Detector Conference, Phil. NJ; Oct. 10, 2011.
20. Uli Baur Memorial, Sept. 24, 2011.
21. EFI Colloquium, May. 2, 2011.
22. Talk on LAPPD at the Knoxville IEEE Workshop, Oct.31, 2010.
23. The Large-Area Psec PhotoDetector Project: Argonne Oct 6, 2010.
24. What Does It Take to Start a University-Lab Detector Program?: Fermilab Detector Workshop, Oct 8, 2010.
25. The Development of Large-Area Psec Planar Photo-Detectors and How the US might Regain the Energy Frontier March 20, 2010.
26. The Development of Large-Area Psec Planar Photo-Detectors, Austin TX, March 20, 2010.
27. Fermilab Talk for Chris Hill, March 4, 2010.

28. The Large-Area Psec Photo-Detector Collaboration DOE HEP Site Visit, Argonne; Sept. 23-24, 2009.
29. The Development of Large-Area Psec-Resolution Detectors; HEPD Presentations and Visit, Argonne; June 6, 2009.
30. Testing the Standard Model; A History and Rationale for Signature-Based Searches; Pheno09, Madison Wisconsin, May 11, 2009.
31. The Development of Large-Area Psec-Resolution Detectors; Advanced Photon Source Users Meeting, Argonne; May 6, 2009.
32. LHCb Upgrade-informal hash of slides for an LHCb Upgrade group meeting; April 9, 2009.
33. Goals of the Workshop on Development of Large Area Fast Photo-detectors, Argonne National Laboratory, Feb 26, 2009.
34. Development of Large Area Fast Photo-detectors, Lawrence Berkeley National Laboratory, Feb 3, 2009.
35. Large Area Micro-Pore Photo-detectors, Argonne National Laboratory, Dec 20, 2008.
36. Timing in HEP, Lyon France, Oct 14, 2008.
37. Development of Large-Area Psec TOF, ANL/Fermilab/UC Collaborative Presentations, Jun 26, 2008.
38. The Future of Pico-second Timing, Final talk at the Workshop of Psec Timing, Chicago, IL March 18, 2008.
39. Thoughts Invoked By Dr. Atomic at Lyric Opera, Gleicher Center, Chicago IL, Jan. 19, 2008.
40. Three Lectures: Precision Measurements and Signature-Based Searches at the Tevatron, XXXV International Meeting on Fundamental Physics, Santiago de Compostela, Spain; May 28, 2007.
41. Precision Measurements, Small Crosssections, and Non-Standard Signatures- The Learning Curve at a Hadron Collider: Michigan State Univ., East Lansing, Mich May 12, 2007.
42. Precision Measurements and Signature-Based Searches at the Tevatron, Physics at the LHC: From Experiment to Theory), Princeton, NJ, March 21, 2007.
43. Pico-second Time of Flight; IBM, Yorktown NY; March 20, 2007.
44. Pico-second Time of Flight Workshop on Fast Timing, Saclay, France; March 8 and 9).
45. The Ultimate Potential of the Tevatron, C2CR07 Conference, Granlibakken, Calif., Feb 26, 2007.
46. For Gordy Kane's 70th Birthday, KaneFest Symposium, East Lansing, Mich., Jan. 19, 2007.
47. Picosecond Timing: Why Simulation is Essential, Opening talk, Workshop on the Simulation of Psec Detectors, Chicago, IL, Dec. 12, 2006.
48. The Development of Large-Area Psec-Resolution TOF Detectors; 2nd Workshop on Psec TOF, Arlington TX; April 28, 2006.
49. Two Lectures on High Energy Collider Physics: Making Precision Measurements; Lake Louise Winter Institute, Lake Louise, Alberta, Canada; Feb. 17-23, 2006.
50. (Very Little) Summary Talk, Workshop on Pico-second Time-of-Flight; University of Chicago; November 18, 2005.
51. Pico-second Time-of-Flight Detector Development; Research Techniques Seminar, Fermilab; July 13, 2005.
52. 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.
53. The Twin Questions of Authorship and Reproducibility of Results in Large Scientific Collaborations; Philosophy of Science Association; Austin Texas; November 18, 2004.
54. Visions of Experimental Particle Physics - Where Are We Going? (Invited Talk, Aspen Winter Conference; January 26, 2003).

55. Signature Based Searches, High Pt Leptons, Top Physics; Some UC Interests and Contributions (Talk to the NSF, Fermilab; November 19, 2002).
56. Making Precision QCD Measurements at Very High Energies (Talk at Matrix Element Workshop, October 4, 2002).
57. Standard Model Backgrounds for the Top Dilepton and W+Jets Analyses (Talk at W+Jets, Dilepton Groups, October 23, 2002).
58. Erin Abouzaid's Talk on W/Z Ratio Work (Erin's Talk at
59. What Could Experiment Tell String Theory? (Talk to EFI Mini-Symposium, October 26, 2001).
60. New Physics at the Tevatron? (Invited Talk, 'From the Smallest to the Largest Distances', a tribute to Tran Than Van, Moscow, May, 2001).
61. Higgs Searches At the Tevatron (Invited Talk at SUSY2000, CERN, Geneva, Switz. June 27th, 2000).
62. Introduction to High Pt Physics at the Tevatron (Two Lectures at the NATO Summer School, Cargese, France, July 1998).
63. Searches for Supersymmetry at the Tevatron (Invited talk, SUSY98, Oxford England, June 1998).
64. 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.
65. The Search for Supersymmetry at the Tevatron Collider, M. Carena et al., to be published in Reviews of Modern Physics.
66. SVT: An Online Silicon Vertex Tracker for the CDF Upgrade, Presented at 7th Pisa Meeting on Advanced Detector: Frontier Detectors for Frontier Physics, La Biodola, Isola D'Elba, Italy, 25-31 May 1997.
67. Beyond the Top Quark, Sackler Colloquium, Institute for Advanced Study, Princeton, NJ, March 6, 1997.
68. A New Measurement of the W Mass. Proceedings of the XXXth Rencontres de Moriond, Meribel les Allues, France, 19-25 Mar 1995, '95 Electroweak Interactions and Unified Theories (J. Tran Thanh Van, ed.), Editions Frontieres, pp. 69-75.
69. Recent Results of Searches for New Particles at Fermilab. Proceedings of the XVI International Conference on Neutrino Physics, Eilat, Israel (1994).
70. CDF Results on the W Mass and the Search for the Top. Proceedings of the Fourth International Symposium on Particles, Strings and Cosmology (K. Wali, ed.), World Scientific, pp. 81-97 (1994).
71. CDF Results on Electroweak Physics. Proceedings of the Vth Blois Workshop, Int. Conference on Elastic and Diffractive Scattering, Brown University, Providence, RI (1993).
72. CDF Electroweak Studies and the Search for the Top Quark. Proceedings of the 23rd International Symposium on Ultra-High Energy Multiparticle Phenomena, Aspen, CO, 12-17 Sep 1993, pp. 151-177.
73. Electroweak Physics with CDF. Proceedings of Les Rencontres de Physique de la Vallee D'Aosta, La Thuile, Italy, March 4-9, 1991.
74. Recent Results from Hadron Colliders. Proceedings of PANIC XII, Cambridge, MA, Jun 25-29, 1990. Published in Nucl. Phys. A527, pp. 291-330 (1991).
75. The Status of Searches for Magnetic Monopoles, Proceedings of the First Aspen Winter Physics Conference (M. Block, ed.), Annals of the New York Academy of Sciences, Vol. 461, pp. 652-665 (1986).
76. The Status of Terrestrial Searches for Magnetic Monopoles, Minneapolis 1985, Proceedings of the Sixth Workshop on Grand Unification, Minneapolis 1985, (S. Rudaz and T. Walsh, eds.), World Scientific Publishing Co., pp. 302-327 (1986).

77. First Results from the Chicago-Fermilab-Michigan Cosmic Ray Magnetic Monopole Detector, (with J.R. Incandela, M. Campbell, H. Frisch, S. Somalwar, M. Kuchnir and H.R. Gustafson).
78. Magnetic Monopole Detection by Induction Techniques, Summary of Parallel Sessions on Monopole Detection by Induction Techniques, Monopole '83 Conf., Ann Arbor, MI, Oct 6-9, 1983. Proceedings of Monopole '83, p. 461, (James L. Stone, ed.), NATO ASI Series, Series B: Physics Vol. 111, Plenum Press, 1984.
79. High  $P_T$  Single Particle Production and Dimuon Production in a High Intensity Pion Beam, Proceedings of the Seventeenth Rencontre de Moriond, Les Arcs, Savoie, France, March 14-26, 1982, p. 157, Editions Frontieres (J. Tran Thanh Van, editor).
80. Design Report of the Fermilab Collider Detector Facility (CDF), August 1981, Fermilab (1981) 331 pp. (with F. Abe et al., H. Frisch and H. Jensen, editors).
81. The Production of Systems with Large Momentum Transfer in Hadron-Nucleus Collisions, Lecture given at the 1980 INS Kikuchi Summer School on Nuclear Physics at High Energies, p. 1, July 1-4, 1980, Fuji-Yoshida, edited by F. Sakata, Organizing Committee of 1980 Summer School, Institute for Nuclear Study, University of Tokyo, October, 1980.
82. The Production of Systems with Large Momentum Transfer in Hadron Nucleus Collisions, 1980. Proceedings, High-Energy Nuclear Interactions and Properties of Dense Nuclear Matter, Vol. 2, Ii.49-87. Hakone, 1980.
83. The Production of Systems with Large Mass or Transverse Momentum in High-Energy Hadron Nucleus Collisions, 1979. Proceedings, Workshop on Ultrarelativistic Nuclear Collisions, Berkeley, 1979, pp. 195-239.
84. Precise Measurements of High  $P_T$  Single Particle Spectra in  $\pi - p$  Collisions at Fermilab. Proceedings of the Rencontre de Moriond, Vol. I, Quarks, Gluons, and Jets, Editions Frontieres (J. Tran Than Van, ed.) 1979, pp. 393-400.
85. A Review of High Transverse Momentum Processes. Proceedings of Annual Meeting of the DPF of the APS, Brookhaven National Lab., Upton, NY Oct 6-8, 1976. Published in DPF Conf. 1976:F59.
86. The Production at Large Transverse Momentum of Particles Heavier than Pions. Proceedings of the XVII International Conference on High Energy Physics, London, July 1974, published by the Science Research Council, Rutherford Laboratory, 1974.
87. The Inclusive Production of High Transverse Momentum Secondaries at 200-GeV and 300-GeV. Proceedings of the Vth Hawaii Topical Conference in Particle Physics, P. Dobson, V. Peterson, and S. Tuan, editors, pp. 91-95 (1973).