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Education:

- *Ph.D., Physics*, December 1997: University of Chicago, Chicago, Illinois
  Thesis: *Searches for New Physics in Diphoton Events in $\overline{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV*
  The Nathan Sugerman Graduate Student Prize, University of Chicago Enrico Fermi Institute Award for Graduate Research
  Thesis Advisor: Professor Henry J. Frisch
- *M.S., Physics*, June 1995: University of Chicago, Chicago, Illinois
- *B.S., Physics*, June 1991: Massachusetts Institute of Technology
  Cambridge, Massachusetts

Research Experience:

- *Research Associate, University of Maryland (DØ), April 1998 – present:*
  Developed new techniques for general signature based searches for New Physics
  Leader of Trigger Simulation project for DØ upgrade
  Designed and simulated the functionality of Level 2 tracking trigger preprocessor crate
  Level 2 Interface card debugging and testing
  Deputy convenor Exotics/New Phenomena physics analysis working group
  Formal supervision of undergraduate summer student
  Informal supervision of graduate students
- *Research Associate, University of Chicago (CDF), January 1998 – April 1998:*
  Trained graduate student on design of Run II trigger upgrade board (Crate Sum)
  Supplemental analysis on searches for New Physics
- *Graduate Student, University of Chicago (CDF), October 1992 – December 1997:*
  Searches for exotic physics in $\gamma\gamma$, $\ell\gamma$, and $W + 2$ jet events with the CDF detector
  Maintenance of Run Ib Level 1 calorimeter trigger
  Design of Run II Level 1 calorimeter trigger upgrade board (Crate Sum)
  Upgrade and maintenance of an online–monitoring package for CDF data (SPY)
  CDF shift crew DAQ expert ("Ace")
- *Laboratory Assistant, Research Division/CDF, Fermilab National Accelerator Laboratory, Batavia, Illinois, June 1991-October 1991:*
  Analysis of photomultiplier tube systems for Fermilab/CDF plug upgrade
  Supervisor: Peter Limon

- *Undergraduate Research Assistant, Massachusetts Institute of Technology*
  December 1989-June 1991:
  Thesis: *Position Resolution of the Detection System of the Out-Of-Plane Spectrometer*
  Thesis Advisor: Professor William Bertozzi

Teaching Experience:

- *Graduate Student Teaching Assistant, University of Chicago, Oct. 1991 – March 1993:*
  Taught recitation, led lab sections, and graded homework in the following courses: quantum mechanics, particle physics courses, honors electromagnetism, and introduction to physical sciences for non-physics majors

Teaching Awards:

- The Wayne C. Booth Graduate Student Prize, University of Chicago Award for Graduate Student Teaching, May 1992
- The Gregor Wentzel Prize, University of Chicago Department of Physics Award for Graduate Student Teaching, June 1992

Committees:

- Editorial Board for QCD Study of Low E_T Jets in Multijet Events, DØ, Spring 2000
- Trigger Menu Panel, DØ Collaboration, 1999
- Organizing Committee, DØ Paris Trigger Workshop, Spring 1999
- Editorial Board for 2nd Generation Leptoquark Search, DØ, Fall 1998
- Undergraduate Thesis Committee for John Peterson
  University of Chicago, May 1997
- Gregor Wentzel Prize Selection Committee, University of Chicago, May 1993

Conference Talks and Seminars:

- "New Phenomena II: Recent Results from the Fermilab Tevatron," 35th Rencontres de Moriond: Electroweak Interactions and Unified Theories, Les Arcs, Mar 2000.
- "CDF Searches for New Phenomena," 12th Les Rencontres de Physique de la Vallee d'Aoste: Results and Perspectives in Particle Physics, La Thuile, Mar 1998.
- "Searches for New Physics in Diphoton + X events at CDF," HEP Lunch Seminar, Argonne National Laboratory, Jan 1998.
- "Searches for New Physics in Diphoton + X events at CDF," HEP Lunch Seminar, University of Chicago, Dec 1997.

- "Diphoton Missing E_T Distribution at CDF," Annual Divisional Meeting (DPF) of the Division of Particles and Fields of the American Physical Society, August 1996.
- "Search for Technicolor in the W+Jet-Jet Decay Channel," TeV33 Conference, May 1996.
- "Search for W' in the W + Jet-Jet Decay Channel," American Physical Society Meeting, May 1996.
- "Search for W' in the W + Jet-Jet Decay Channel," American Physical Society Meeting, May 1995.

References:

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Publications

A) Primary Publications[1]

1. SEARCH FOR NEW PHYSICS IN $e\mu X$ DATA AT THE TEVATRON USING SHERLOCK: A QUASI-MODEL-INDEPENDENT NEW PHYSICS SEARCH STRATEGY
   B. Abbott *et al.* (DØ Collaboration), To be submitted to Phys. Rev. D

2. SEARCHES FOR NEW PHYSICS IN DIPHOTON EVENTS IN $\overline{p}p$ COLLISIONS AT $\sqrt{s} = 1.8$ TEV
   F. Abe *et al.* (CDF Collaboration), *Phys. Rev.* D **59**, 092002 (1999)

3. SEARCHES FOR NEW PHYSICS IN DIPHOTON EVENTS IN $\overline{p}p$ COLLISIONS AT $\sqrt{s} = 1.8$ TEV
   F. Abe *et al.* (CDF Collaboration), *Phys. Rev. Lett.* **81**, 1791 (1998)

4. SEARCH FOR LONGLIVED PARENTS OF Z^0 BOSONS IN $\overline{p}p$ COLLISIONS AT $\sqrt{s}$ = 1.8-TEV
   F. Abe *et al.* (CDF Collaboration), *Phys. Rev.* D **58**, 0511102 (1998)

5. SEARCH FOR A TECHNICOLOR ω_{T} PARTICLE IN EVENTS WITH A PHOTON AND A B QUARK JET AT CDF
   F. Abe *et al.* (CDF Collaboration), *Phys. Rev. Lett.* **83**, 3124 (1999)

6. SEARCH FOR SECOND GENERATION LEPTOQUARK PAIRS DECAYING TO MUON NEUTRINO + JETS IN $\overline{p}p$ COLLISIONS AT $\sqrt{s} = 1.8$ TEV
   B. Abbott *et al.* (DØ Collaboration), *Phys. Rev. Lett.* **83**, 2896 (1999)

7. SEARCH FOR SECOND GENERATION LEPTOQUARK PAIRS IN $\overline{p}p$ COLLISIONS AT $\sqrt{s} = 1.8$ TEV
   B. Abbott *et al.* (DØ Collaboration), *Phys. Rev. Lett.* **84**, 2088 (2000)

8. EXTRACTION OF THE WIDTH OF THE W BOSON FROM MEASUREMENTS OF $\sigma\ (\overline{p}p \to W + X) \cdot B(W \to e\nu)$ AND $\sigma(\overline{p}p \to Z + X) \cdot B(Z \to ee)$ AND THEIR RATIO
   B. Abbott *et al.* (DØ Collaboration), *Phys. Rev.* D **61**, 072001 (2000)

B) Published Conference Proceedings

1. NEW PHENOMENA II: RECENT RESULTS FROM THE FERMILAB TEVATRON
   D. Toback (for the CDF and DØ collaborations), Proceedings of the 35th Rencontres de Moriond: Electroweak Interactions and Unified Theories (Moriond 2000)

2. CDF SEARCHES FOR NEW PHENOMENA
   D. Toback (for the CDF collaboration), Proceedings of the 12th Les Rencontres de Physique de la Vallee d'Aoste: Results and Perspectives in Particle Physics
   (La Thuile 1998), FERMILAB-CONF-98-183-E.

[1]Primary documents are those for which I conducted the analysis and wrote the results or for which I played a major role in the analysis and/or review.

3. THE DIPHOTON MISSING E_T DISTRIBUTION AT CDF
   D. Toback (for the CDF collaboration), Proceedings of the 1996 Annual Divisional Meeting of the Division of Particles and Fields of the American Physical Society (DPF 1996), FERMILAB-CONF-96-240-E

4. SENSITIVITY TO NEW PHYSICS IN THE W + JET-JET DECAY CHANNEL AT THE TEVATRON
   D. Toback, Proceedings of the 1996 DPF / DPB Summer Study on New Directions for High-Energy Physics (Snowmass 1996), FERMILAB-CONF-96-360

C) Primary Internal Notes

1. THE Eμ DATA SET USED FOR THE SHERLOCK ANALYSIS
   D. Toback, B. Knuteson, J. Cochran and H. Singh, DØ Note 3700, pp1-46, Oct. 1999.

2. THE SHERLOCK SEARCH STRATEGY: A QUASI-MODEL-INDEPENDENT PRESCRIPTION FOR SEARCHING FOR NEW PHYSICS
   B. Knuteson and D. Toback, DØ Note 3701, pp1-12, Oct. 1999.

3. SHERLOCK SEARCH STRATEGY SUPPLEMENT: DØ RUN I
   B. Knuteson and D. Toback, DØ Note 3715, pp1-7, Jan 2000.

4. SHERLOCK: A MULTIVARIATE, QUASI-MODEL-INDEPENDENT ALGORITHM FOR FINDING ANOMALOUS EVENTS
   B. Knuteson and D. Toback, DØ Note 3686, pp1-50, Oct. 1999.

5. SPECIFICATION OF THE LEVEL 2 CENTRAL FIBER TRACKER PREPROCESSOR CRATE: STT INPUT SCENARIO
   D. Baden, & D. Toback, Unnumbered DØ Note, pp 1-41, Sept 1999

6. HOW TO USE THE TRIGGER NTUPLE MAKER
   T. Landers and D. Toback, DØ Note 3666, pp 1-21, October 1999

7. THE MAGIC BUS TRANSCEIVER CARD
   D. Baden, R. Bard, J. Giganti and D. Toback, Unnumbered DØ Note, pp 1-68, May 1999

8. OVERVIEW OF THE RUN II DØ TRIGGER SIMULATOR
   A. Boehnlein, G. Blazey, M. Fortner, N. Hadley, J. Linnemann and D. Toback
   DØ Note 3555, pp 1-6, November 1998

9. SPECIFICATION OF THE LEVEL 2 CENTRAL FIBER TRACKER PREPROCESSOR CRATE
   D. Baden, D. Toback, F. Borcherding and K. Yip, Unnumbered DØ Note, pp 1-35, November 1998

10. CRATE SUM BOARD MODULE SPECIFICATIONS
    D. Toback and N. Lai, CDF Note 4812, pp. 1-24, August 1995 (Revised November 1998)

11. CRATE SUM (UPGRADE FOR RUN II)
D. Toback and N. Lai, CDF Note 4811, pp. 1-31, June 1995 (Revised November 1998)

12. THE $ee\gamma\gamma\not\!\!E_{\rm T}$ CANDIDATE EVENT
D. Toback, H. Frisch, R. Culbertson, D. Stuart and F. Qun, CDF Note 4304, pp. 1-58, August 1997

13. SUMMARY OF THE $\gamma\gamma + X$ COUNTING EXPERIMENTS
D. Toback, H. Frisch, P. Wilson, R. Culbertson, J. Berryhill and R. Blair,
CDF Note 4183, pp. 1-35, May 1997

14. SETTING LIMITS WITH THE $\gamma\gamma + \not\!\!E_{\rm T}$ ANALYSIS
D. Toback, H. Frisch, R. Culbertson, P. Wilson, J. Berryhill and R. Blair,
CDF Note 4121, pp. 1-47, March 1997

15. COMMENTS ON RUN 65390, EVENT 16199: CDF'S $\mu\mu\gamma\gamma$ + 2 JET CANDIDATE EVENT
M. Contreras, H. Frisch and D. Toback, CDF Note 3917, pp. 1-20, October 1996

16. FAKE, OVERLAP, COSMIC RAY AND STANDARD MODEL ESTIMATES FOR THE 'PSEUDO-$ee\gamma\gamma\not\!\!E_{\rm T}$' EVENT
D. Toback, J. Berryhill, R. Culbertson, H. Frisch, and P. Wilson, CDF Note 3892, pp. 1-28, September 1996

17. UPDATE TO CDF NOTE 3555: SEARCH FOR COUSINS OF THE $ee\gamma\gamma\not\!\!E_{\rm T}$ EVENT IN THE $\ell\gamma\not\!\!E_{\rm T}$ CHANNEL
J. Berryhill, R. Culbertson, H. Frisch, D. Toback and P. Wilson, CDF Note 3851, pp. 1-39, August 1996

18. UPDATE TO CDF NOTE 3456: SEARCH FOR COUSINS OF THE $ee\gamma\gamma\not\!\!E_{\rm T}$ EVENT IN THE DIPHOTON CHANNEL
J. Berryhill, R. Blair, R. Culbertson, H. Frisch, J. Huston, S. Kuhlmann, T. Takano, D. Toback and P. Wilson, CDF Note 3850, pp. 1-58, September 1996

19. MINIMAL ZOOSY: FOUR EVENTS
J. Berryhill, R. Culbertson, H. Frisch, D. Toback and P. Wilson, CDF Note 3571, pp. 1-12, February 1996

20. SPECULATIONS ON HIGH-MASS NEUTRAL CURRENT EVENTS
J. Berryhill, R. Culbertson, H. Frisch, D. Toback and P. Wilson, CDF Note 3556, pp. 1-23, February 1996

21. A SEARCH FOR SUSY COUSINS OF THE $ee\gamma\gamma\not\!\!E_{\rm T}$ EVENT IN THE $\ell\gamma\not\!\!E_{\rm T}$ CHANNEL
J. Berryhill, R. Culbertson, H. Frisch and D. Toback, CDF Note 3555, pp. 1-17, February 1996

22. SEARCH FOR COUSINS OF THE $ee\gamma\gamma\not\!\!E_{\rm T}$ EVENT IN THE DIPHOTON CHANNEL
R. Culbertson, H. Frisch and D. Toback, CDF Note 3456, pp. 1-10, December 1995

23. SEARCH FOR W' IN THE W+DIJET DECAY CHANNEL
D. Toback, CDF Note 3094, pp. 1-67, March 1995

24. THE 970 GEV $Z \to e^+e^- + 2$ JETS EVENT: DOES IT HAVE $Z \to q\bar{q}$ +2 JET COUSIN-S?
M. Contreras, H. Frisch, C. Grosso-Pilcher, G. Sullivan and D. Toback, CDF Note 2483, pp. 1-16 February 1994

D) Secondary Internal Notes

1. USERS GUIDE FOR LEVEL 1 ELECTRON, PHOTON AND JET TRIGGERS
A. Amadon, R. Culbertson, H.J. Frisch, C. Gross-Pilcher, M. Shochet, D. Toback, J. Wahl and P.J. Wilson, CDF Note 4782, pp. 1-5, Oct 1998

2. LIMITS ON THE TECHNICOLOR OMEGA FROM EVENTS WITH A PHOTON AND B-TAG
J. Berryhill, R. Culbertson, H. Frisch, M. Shochet, D. Toback, and P. Wilson, CDF Note 4397, pp. 1-21, November 1997

3. SEARCH FOR LONG-LIVED PARENTS OF Z^0s
J. Peterson, M. Shochet, and D. Toback, CDF Note 4198, pp. 1-33, May 1997

4. SEARCH FOR A LIGHT STOP IN PHOTON-ENRICHED SUSY
J. Berryhill, R. Culbertson, H. Frisch, M. Shochet, D. Toback and P. Wilson, CDF Note 4155, pp. 1-38, April 1997

5. MORE (LESS?) ABOUT THE TAGGING EXCESS IN THE W + 2 JET DATA
A. Amadon, J. Berryhill, R. Culbertson, H. Frisch, D. Toback and P. Wilson, CDF Note 3674, pp. 1-27, May 1996

6. SEARCH FOR NEW PHYSICS IN EVENTS WITH A PHOTON, b-TAG, AND $\not\!\!E_{\mathrm{T}}$
J. Berryhill, R. Culbertson, H. Frisch, D. Toback and P. Wilson, CDF Note 3572, pp. 1-56, February 1996

7. WE ARE PUZZLED!
A. Amadon, J. Berryhill, R. Culbertson, H. Frisch, M. Hohlmann, M. Shochet and D. Toback, CDF Note 3524, pp. 1-5, February 1996

8. A FEW OBSERVATIONS ABOUT THE WH SEARCH
A. Amadon, J. Berryhill, R. Culbertson, H. Frisch, M. Hohlmann, M. Shochet and D. Toback, CDF Note 3502, pp. 1-9, January 1996

9. CONCEPTUAL DESIGN OF THE L1 CALORIMETER TRIGGER FOR THE RUN II UPGRADE
H. Frisch, M. Shochet, G. Sullivan, D. Toback, J. Wahl and P. Wilson, CDF Note 2909, pp. 1-16, December 1994

See Addendum for a complete list of publications