KEVIN LANNON

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EDUCATION

Ph.D. Physics, University of Illinois, Urbana-Champaign, IL, expected Summer 2003.

Thesis: *A Measurement of B Hadron Correlations in* $p\bar{p}$ *Collisions at* $\sqrt{s}$ *= 1.8 TeV.*

Advisors: Steven Errede and Kevin Pitts.

B.A. Physics, Math, and English, St. Norbert College, DePere, WI, May 1997.
Summa Cum Laude and Graduate of the Honors Program.

AWARDS

Giulio Ascoli Award for Demonstrating Excellence and Originality in the Study of High Energy Physics	2001
Excellence in Teaching Award, University of Illinois	Fall 1997 and Spring 1998
Rev. Patrick N. Butler Award for Excellence in English Studies	1997
William J. O'Callahan Award in the Arts and Sciences	1997
Physics Award, St. Norbert College	1997
St. Norbert College Alumni Association Award for Highest Academic Achievement	1997
GTE Academic All-American, Second Team, Cross Country and Track	1996–1997
English Faculty Endowed Scholarship, St. Norbert College	1996
Midwest Conference Academic All-Conference, Cross Country, Indoor Track, and Outdoor Track (12 seasons total)	1994–1997
Distinguished Trustees Scholarship, St. Norbert College	1993

TEACHING EXPERIENCE

Teaching Assistant, University of Illinois at Urbana-Champaign August 1997–May 1998
Physics 101, General Physics

Taught four laboratory sections (Fall 1997) and led four discussion sections (Spring 1998). Created weekly quizzes. Graded lab reports, quizzes, and tests. Held office hours to help students with web-based homework.

Undergraduate Teaching Assistant, St. Norbert College August 1994–May 1997
Physics 121-122, General Physics

Assisted professor during lab sections. Tutored students during office hours.

Writing Tutor, St. Norbert College August 1994–May 1997
Write Place, Tutorial Writing Center

Worked one-on-one with students at all stages of the writing process. Worked with professors to integrate "Writing Across the Curriculum" plan into specific courses in several disciplines.

RESEARCH EXPERIENCE

Research Assistant, University of Illinois at Urbana-Champaign June 1998–Present
CDF Collaboration

Performed an analysis of *B* hadron correlations using secondary vertices reconstructed in the Run Ib inclusive electron and muon data samples (PRD draft in preparation). Developed a new *B*-tagging algorithm capable of resolving *B* hadrons produced with small opening angle. Developed new techniques to evaluate mistags and charm contributions in heavy flavor samples. Used these techniques to isolated the largest sample of double-tagged semileptonic heavy flavor decays (~17,000 events) ever observed at a hadron collider. In addition to analyzing data, generated large samples of PYTHIA and HERWIG Monte Carlo. Wrote code to separate Monte Carlo events by $b\bar{b}$ production mechanism, based on a scheme developed by Rick Field. Also, used Monte Carlo samples to study acceptances in *B* production aimed at improving our understanding for flavor tagging for B_s mixing and *CP* violation. Documented this work with internal CDF notes.

Led the muon calibration effort. Helped design muon calibration system, including purchasing of commercial VME hardware and design of custom electronics. Installed and tested hardware and cables. Wrote software in C and Java to control hardware elements and integrate them with existing data acquisition infrastructure. Wrote code in C++ to analyze muon calibration data and store results in database. Created and maintained muon calibration documentation.

RESEARCH EXPERIENCE (CONTINUED)

Assisted with the testing and installation of electronics for the Run II muon chamber upgrade. Developed a procedure for testing Run I ASD boards for the CMP muon detector. Installed CMP chamber electronics. Worked on eliminating CMP chamber oscillations by improving the grounding scheme. Contributed to studies to understand the effect of beam losses on CMP chamber currents. Helped develop a test stand and checkout procedure for the VME-based ASD2 boards for CMU muon chambers. Contributed to CMU muon reconstruction code. Determined initial values for calibration constants used in CMU muon reconstruction, particularly the calibration of the z measurement in the CMU chambers through charge division. Fixed problems with muon chamber electronics and high voltage as problems developed during detector operations. Served as on-call CMU and CMP muon detector expert.

Served as a Run II data acquisition expert from March to June of 2002. This position involved preparing the CDF detector for data taking, monitoring detector operation during data taking, solving data acquisition problems as quickly as possible to minimize downtime when colliding beams were present in the machine, and performing detector calibrations between data taking periods.

Undergraduate Summer Research Participant Summers 1994–1997
Argonne National Laboratory

Developed an unbinned likelihood fitting method for the photon transverse energy spectrum from CDF W plus photon data.

Characterized the properties of W or Z plus multiple photon candidates in CDF data.

Assisted with a GEANT simulation of the ATLAS tile calorimeter test beam setup.

PUBLICATIONS

D. Acosta, *et al.*, "Measurement of the Mass Difference $m(D_s^+) - m(D^+)$ at CDF II," submitted to Phys. Rev. D.

D. Acosta, *et al.*, "Search for the Supersymmetric Partner of the Top Quark in Dilepton Events from $p\bar{p}$ Collisions at $\sqrt{s}$ = 1.8 TeV," submitted to Phys. Rev. Lett.

D. Acosta, *et al.*, "Central Pseudorapidity Gaps in Events with a Leading Antiproton at the Fermilab Tevatron $p\bar{p}$ Collider," submitted to Phys. Rev. Lett.

D. Acosta, *et al.,* "Search for Associated Production of Υ and Vector Boson in $p\bar{p}$ Collisions at $\sqrt{s}$ = 1.8 TeV," submitted to Phys. Rev. Lett.

D. Acosta, *et al.*, "Search for Long-Lived Charged Massive Particles in $p\bar{p}$ Collisions at $\sqrt{s}$ = 1.8 TeV," submitted to Phys. Rev. Lett.

D. Acosta, *et al*., "Search for a W' Boson Decaying to a Top and Bottom Quark Pair in 1.8 TeV $p\bar{p}$ Collisions," Phys. Rev. Lett. **90**, 081802 (2003).

D. Acosta, *et al*., "Cross Section for Forward J/ψ Production in $p\bar{p}$ Collisions at $\sqrt{s}$ = 1.8 TeV," Phys. Rev. **D66**, 092001 (2002).

TALKS

"A Study of $b\bar{b}$ Production Correlations at the Tevatron," APS/DPF 2003

"A Study of $b\bar{b}$ Production Correlations at the Tevatron," DPF 2002.

"Calibration Software for the Muon Detectors at CDF," APS 2001.

COMPUTER SKILLS

Languages: FORTRAN, C, C++, Java, Unix shell programming (csh, sh, bash), some Perl.

Operating Systems: Unix, Windows, Linux.

REFERENCES

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