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(a) Professional Preparation

University of Chicago	Ph.D. Physics	March, 1991
Cornell University	B.A. Physics	May, 1985

(b) Appointments

2009–	Professor	Stony Brook University, NY; DØ and ATLAS experiments
2004–2009	Associate Professor	Stony Brook University, NY; DØ experiment
1998–2004	Assistant Professor	Stony Brook University, NY; DØ experiment
1996–1998	Wilson Fellow	Fermilab, Chicago, Illinois; DØ experiment
1993–1996	Post Doctoral Assoc.	Fermilab, Chicago, Illinois; DØ experiment
1991-1993	Scientific Assoc.	CERN, Geneva Switzerland; OPAL experiment

(c) Research Activities

As a Stony Brook faculty member, I have carried out research on the D0 and ATLAS experiments. The ATLAS work is most recent, and I outline it here. My initial ATLAS research was measurements of W+jet production and leptoquark searches in lepton + jet final states which led to world leading sensitivity. As these results became statistically limited, my group continued using the lepton + jet final state to measure WW production properties. More recently, prompted largely by predictions from Stony Brook theory colleagues, my group has begun searches for hypothetical particles which appear in Higgs boson decay and whose existence would require new physics and depending on the model detail relate to dark matter. This work is ongoing, and our results have been combined with other ATLAS results to give world leading sensitivity to these models.

In addition, my group has participated in the design, production and testing of custom electronics components used as part of the ATLAS Liquid Argon calorimeter. For both the “Phase-I” trigger path upgrade and the “HL-LHC” detector read out upgrade, we were and read responsible for all aspects of design and production electronics used to interface to the experimental data acquisition system. Our electronics receive synchronization signals from the central ATLAS system and distribute them locally to processing components (the responsibility of collaborators) which reconstruct energy depositions. Our electronics are also responsible for output paths from the energy reconstruction to the ATLAS data acquisition system using optical links at 9.6 Gbps, 10 Gpbs or 25 Gbps depending on the specific path.

In addition to these specific activities, I have been a member or chairperson of many internal scientific review boards on both D0 and ATLAS. I am also co-supervising work on speed up of Monte Carlo simulations for the high luminosity LHC data taking period.

Significant Research Management Roles

2021 -	ATLAS Experiment – HL-LHC LAr Upgrade Off-Detector Electronics Co-coordinator
2017 -	ATLAS Experiment – US ATLAS Operations Program, NSF P.I.
2017 - 2023	ATLAS Experiment – Phase I LAr Upgrade Off-Detector Electronics Coordinator
2012 – 2020	ATLAS Experiment – US ATLAS Upgrade NSF P.I. and Deputy Project Manager
2005 – 2007	DØ Experiment, Physics Coordinator

Other Service Contributions or Awards

2023 - 2024	Chancellor's Award for Excellence in Scholarship and Creative Activities.
2012 – 2014	Member of HEPAP
2011	APS Fellow
2009	Stony Brook Physics & Astronomy Departmental (Teaching) Award
2006	Chair, APS Tanaka Prize Committee
2005	Deputy Chair, APS Tanaka Prize Committee
2000	Stony Brook Physics & Astronomy Departmental (Teaching) Award

(d) Post Doctoral Mentoring

As a faculty member, I have been the primary mentor for 7 post doctoral associates. In addition, as part of the Stony Brook HEP group, I interact with all of the group's post docs on a regular basis through group meetings and informal conversations. My post doctoral associates have been:

- Dr. Fang-Ying Tsai, ATLAS (current)
- Dr. Yesenia Hernandez-Jimenez, ATLAS (current)
- Dr. Liljana Morvaj, ATLAS, now research scientist at PSI
- Dr. Daniel Boline, D0/ATLAS, now software industry
- Dr. Junjie Zhu, D0 now HEP faculty at Univ. of Mich.
- Dr. Sherry Towers, D0, now Institute for Advanced Sustainability Studies, Potsdam, Germany
- Dr. Wendy Taylor, D0, now HEP faculty at York Univ., Toronto, CA

Through my various management responsibilities I have informally helped and interacted with many post docs at other collaborating institutions

(e) Student Mentoring

While at Stony Brook, I have been the primary mentor for 10 Ph.D students, 3 Master's degree students and many undergraduate students. As with post docs, I also interact with all of the group's Ph.D. students and most of the Master's degree and undergraduate students. My Ph.D. students, and their position immediately after finishing their Ph.D. are:

- Maria "Mars" Lyukova, ATLAS (current, Ph.D. expected, 2026)
- Christopher Hayes, ATLAS, Ph.D. 2019; Univ. of Michigan, post doc
- Alyssa Montalbano, ATLAS, Ph.D. 2017; Simon Fraser Univ, post doc (co-advisor)
- Karen Chen, ATLAS, Ph.D. 2015; Omega Point software
- Rafael Lopes de Sa, D0, Ph.D. 2013; Fermilab Lederman Fellow (now faculty at UMass Amherst)
- Regina Caputo, ATLAS, Ph.D. 2011; Mainz Univ. post doc (now Goddard Space Flight Center)
- Emanuel Strauss, D0, Ph.D. 2009; SLAC post doc (now Facebook)
- Ken Herner, D0, Ph.D. 2008; FNAL post doc (now FNAL staff)
- Huishi Dong, D0, Ph.D. 2007; private industry
- Satish Desai, D0, Ph.D. 2006; FNAL post doc

Through my various management responsibilities, I have informally helped and interacted with many Ph.D. at other collaborating institutions

(f) Publications

~1750 Publications primarily with the OPAL (~150), DØ (~400), and ATLAS (~1200) Collaborations including many with direct participation as an analyst, graduate student or post doc mentor or internal reviewer.

Five Significant Publications

1. Search for Higgs boson decays into a pair of pseudoscalar particles in the bbμμ final state with the ATLAS detector in pp collisions at $\sqrt{s}$ = 13 TeV, Phys. Rev. D 105 (2022) 012006. [139 fb^{-1}]
2. Search for Higgs boson decays into a pair of light bosons in the bbμμ final state in pp collision at $\sqrt{s}$ = 13 TeV with the ATLAS detector, Phys. Lett. B 790 (2019) 1 [36 fb^{-1}]
3. Measurement of total and differential W^+W^- production cross sections in proton-proton collisions at sqrt{s}=8 TeV with the ATLAS detector and limits on anomalous triple-gauge-boson couplings, The ATLAS collaboration (*G. Aad, et al.*), JHEP **1609** 029 (2016).
4. Measurement of W+W- production in association with one jet in proton--proton collisions at sqrt{s} =8 TeV with the ATLAS detector, The ATLAS collaboration (M. Aaboud, et al.), Phys. Lett. B 763 (2016) 114.
5. Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC, The ATLAS collaboration (G. Aad, *et al.*), Phys. Lett. **B716**, 1 (2012).

Five other significant publications

1. Measurement of the W boson mass with the DØ detector, the DØ Collaboration (V. Abazov *et al.*). Phys. Rev. **D89** (2014) no. 1, 012005
2. Study of jets produced in association with a W boson in pp collisions at sqrt(s) = 7 TeV with the ATLAS detector, The ATLAS Collaboration (G. Aad *et al.*), Phys. Rev. **D85** 092002 (2012)
3. Multi-channel search for squarks and gluinos in sqrt(s) = 7 TeV pp collisions with the ATLAS detector at the LHC, The ATLAS Collaboration (G. Aad et al.) Eur. Phys. J **C73** (2013).
4. Tests of the Electroweak Standard Model at the Energy Frontier, J. Hobbs, M. Neubauer, S. Willenbrock, Rev. Mod. Phys. **84**, 1477 (2012)
5. Observation of the Top Quark, the DØ Collaboration (S. Abach*i et al.*). Phys. Rev. Lett. **74** 2632-2637 (1995).

Other publications with direct involvement

This list includes additional publications for which I have been an analyzer, student or post doc advisor, internal author or member of the internal review process.

The Phase-I trigger readout electronics upgrade of the ATLAS Liquid Argon calorimeters, G. Aad et al 2022 JINST 17 P05024 (2022).

Combination of searches for Higgs boson pairs in pp collisions at $\sqrt{s}$ = 13.6 TeV with the ATLAS detector, Phys. Lett. B 800 (2020) 135103.

Search for a heavy Higgs boson decaying into a Z boson and another heavy Higgs boson in the ℓℓbb final state in pp collisions at $\sqrt{s}$=13 TeV with the ATLAS detector Phys. Lett. B 783 (2018) 392.

Measurement of the ttbar production cross section in the τ + jets final state in pp collisions at $\sqrt{8}$ TeV using the ATLAS detector, Phys. Rev. D 95 (2017) 072003.

Searches for scalar leptoquarks in pp collisions at $\sqrt{s}$ = 8 TeV with the ATLAS detector, Eur. Phys. J. C, 76(1), 1-28 (2016).

Monitoring and data quality assessment of the ATLAS liquid argon calorimeter, The ATLAS collaboration 2014 JINST 9 P07024 (2014).

Measurement of the W^+W^- cross section in $\sqrt{s}$=7 TeV pp collisions with ATLAS, Phys. Rev. Lett. 107 (2011) 041802.

Search for pair production of first or second generation leptoquarks in proton-proton collisions at $\sqrt{s}$=7 TeV using the ATLAS detector at the LHC, Phys. Rev. D 83 (2011) 112006.

Measurement of the $W \rightarrow l\nu$ and $Z/\gamma^* \rightarrow ll$ production cross sections in proton-proton collisions at $\sqrt{s}$=7 TeV with the ATLAS detector, JHEP 12 (2010) 060.

Readiness of the ATLAS liquid argon calorimeter for LHC collisions, Eur. Phys. J. C 70 (2010) 723.

Observation of *ZZ* production in *ppbar collisions* at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys.Rev.Lett.101:171803, 2008.

ZZ $\rightarrow$ llvv in *ppbar collisions* at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys.Rev.D78:072002,2008

Measurement of the electron charge asymmetry in *ppbar* $\rightarrow$ *W* + X $\rightarrow$ *e*v + *X* events at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys.Rev.Lett.101:211801, 2008.

Measurement of the forward-backward charge asymmetry and extraction of $\sin^2(\theta_W^{eff})$ in *ppbar* $\rightarrow$ $Z/\gamma^* \rightarrow e^+e^-$ + *X* events produced at $\sqrt{(s)}$ = 1.96 TeV, Phys. Rev. Lett. 101, 191801, (2008).

A combined search for the standard model Higgs boson at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys. Lett. B663, 26 (2008).

Measurement of the shape of the boson transverse momentum distribution in *ppbar* $\rightarrow$ $Z/\gamma^* \rightarrow e^+e^-$ + *X* events produced at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys. Rev. Lett. 100, 102002 (2008).

Model-independent measurement of the W boson helicity in top quark decays at D0, V. M. Abazov *et al.*, Phys. Rev. Lett. 100, 062004 (2008).

Search for $B^0 \rightarrow \mu^+\mu^-$ at DØ, V. M. Abazov *et al.*, Phys. Rev. D 76, 092001 (2007).

Measurement of the *pp* $\rightarrow$ *WZ* + *X* Cross Section at $\sqrt{s}$ = 1.96 TeV and Limits on WWZ Trilinear Gauge Couplings, V. M. Abazov *et al.*, Phys. Rev. D 76, 111104R (2007).

Direct observation of the strange *b* baryon Ξ_b^-, V. M. Abazov *et al.*, Phys. Rev. Lett. 99, 052001 (2007).

Search for a Higgs boson produced in association with a *Z* boson, V. M. Abazov *et al.*, Phys. Lett. B 655, 209 (2007).

Evidence for production of single top quarks and first direct measurement of $|V_{tb}|$, V. M. Abazov *et al.*, Phys. Rev. Lett. 98, 181802 (2007).

Measurement of B_d Mixing Using Opposite-side Flavor Tagging, V. M. Abazov *et al.*, Phys. Rev. D 74, 112002 (2006).

Search for Neutral Long Lived Particles Decaying to Two Muons in *ppbar* Collisions at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys. Rev. Lett. 97, 161802 (2006).

Measurement of $B(t \rightarrow bW)/B(t \rightarrow qW)$ at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, Phys. Lett. B 639, 616 (2006).

Direct Limits on B^0_s Oscillation Frequency, V. M. Abazov *et al.*, Phys. Rev. Lett. 97, 021802 (2006).

Search for Doubly-charged Higgs Boson Production in the Decay $H^{++}H^{--} \rightarrow \mu^+\mu^+\mu^-\mu^-$ with the DØ Detector at $\sqrt{s}$ = 1.96 TeV, V. M. Abazov *et al.*, , Phys. Rev. Lett 93, 141801 (2004)

tt Production Cross Section in *ppbar* Collisions at $\sqrt{s}$ = 1.8 TeV, V. M. Abazov *et al.*, Phys. Rev. D 67, 012004 (2003).

Measurement of the Angular Distribution of Electrons from $W \rightarrow ev$ Decays Observed in *ppbar* Collisions at $\sqrt{s}$ = 1.8 TeV, B. Abbott *et al.*, Phys. Rev. D 63, 072001 (2001).
Report of the Higgs Working Group of the Tevatron Run 2 SUSY/Higgs Workshop, M. Carena, J. S. Conway, H. E. Haber, J. D. Hobbs, *et. al.*, Fermilab-Conf-00/279-T and hep-ph/0010338. (2000; UNREFEREED)

Cross Section for b Jet Production in *ppbar collisions* at $\sqrt{(s)}$ = 1.8 TeV, B. Abbott *et al.*, Phys. Rev. Lett. 85, 5068 (2000).

Search for R-parity Violating Supersymmetry in the Dielectron Channel, B. Abbott *et al.*, Phys. Rev. Lett. 83, 4476 (1999).

Search for Bottom Squarks in *ppbar collisions* at $\sqrt{s}$=1.8 TeV, B.Abbott *et al.*, Phys. Rev. D 60 Rapid Communications, 031101 (1999)

Search for Squarks and Gluinos in Events Containing Jets and a Large Imbalance in Transverse Momentum, B. Abbott *et al.*, Phys. Rev. Lett. 83, 4937 (1999)

Search for Nonstandard Higgs Bosons Using High Mass Photon Pairs in $ppbar \rightarrow \gamma\gamma$ + 2 *jets* at $\sqrt{s}$ = 1.8 TeV, B.Abbott *et al.*, Phys. Rev. Letters 82, 2244 (1999).

Search for Squarks and Gluinos in Single-Photon Events with Jets and Large Missing Transverse Energy in *pp* Collision at $\sqrt{s}$=1.8 TeV., Abbott *et al.*, Phys. Rev. Lett. 82, 29 (1999).

The Dijet Mass Spectrum and a Search for Quark Compositeness in *ppbar collisions* at $\sqrt{s}$ = 1.8 TeV, Abbott *et al.*, Phys. Rev. Lett. 82, 2457 1999.

Search for Charge 1/3 Third Generation Leptoquarks in *ppbar collisions* at $\sqrt{s}$= 1.8 TeV, B. Abbott *et al.*, Phys. Rev. Lett. 81, 38 (1998).

Search for First Generation Scalar Leptoquark Pairs in *ppbar collisions* at $\sqrt{s}$ = 1.8 TeV, Abbott *et al.*, Phys. Rev. Lett. 80, 2051 (1998).

Experimental Search for Chargino and Neutralino Production via Gauge Mediated Supersymmetry Models, Abbott *et al.*, Phys. Rev. Lett. 80, 442 (1998) .

Search for Scalar Leptoquark Pairs Decaying to Electrons and Jets in *ppbar collisions*, Abbott *et al.*, Phys. Rev. Lett. 79, 4321 (1997) .

Measurement of the Top Quark Pair Production Cross Section in *ppbar collisions*, Abachi *et al.*, Phys. Rev. Lett. 79, 1203 (1997) .

Top Quark Search with the DØ 1992-1993 Data Sample, Abachi *et al.*, Phys. Rev. D 52, 4877 (1995) .

Limits on the ZZγ and Z$\gamma\gamma$ Couplings in *ppbar* Collisions at $\sqrt{s}$ = 1.8 TeV, Abachi *et al.*, Phys. Rev. Lett. 75, 1028 (1995) .

Search for High Mass Top Quark Production in *ppbar* Collisions at $\sqrt{s}$ = 1.8 TeV, Abachi *et al.*, Phys. Rev. Lett. 74, 2422 (1995) .

A Modular Electronic Readout System for the OPAL Electromagnetic Presampler, J. D. Hobbs *et al.*, Nucl. Instrum. Methods A325, 494 (1993).

The OPAL Silicon Microvertex Detector, P. P. Allport, *et al.*, Nucl. Instrum. Methods A324, 34 (1993).

Measurement of the τ Lifetime, P. Acton *et al.*, Zeit. fÄur Physik C59, 183 (1993).

Measurement of the τ Topological Branching Ratios at LEP, P. Acton *et al.*, Phys. Lett. B288, 373 (1992).

The OPAL Detector at LEP, K. Ahmet *et al.*, Nucl. Instrum. Methods A305, 275 (1991).

Limits on Neutral Heavy Lepton Production from Z^0 Decay, M.Z. Akwary *et al.*, Phys. Lett. B247, 448 (1990).

A Direct Search for New Charged Heavy Leptons at LEP, M.Z. Akwary *et al.*, Phys. Lett. B240, 250 (1990).