

## CURRICULUM VITAE OF BRUCE MELLADO

### (1) Professional Preparation:

Moscow State University	Physics	B.Sc.	1995
Moscow State University	Physics	M.Sc.	1995
Columbia University	Physics	M.A.	1997
Columbia University	Physics	Ph.D.	2001

**Thesis Advisors**                      Professors Allen Caldwell and Frank Sciulli

### (2) Appointments:

Aug 2006-present	Assistant Professor, University of Wisconsin-Madison
2004-2006	Assistant Scientist, University of Wisconsin-Madison
2001-2004	Associate Researcher, University of Wisconsin-Madison
1997-2001	Research Assistant, Columbia University
Summer 1996	Summer Research Assistant, Columbia University
1994-1995	Undergraduate Research Assistant, Moscow State University

### (3) Honors:

- Grant by the Wisconsin Alumni Research Foundation in 2007
- CERN Fellowship awarded in 2001
- Marie Curie Fellowship with Univ. of Oxford awarded in 2001
- Awarded B.Sc. and M.Sc. with Honors in 1995
- Fellowship of Spanish-Russian Ministries of Education at Moscow State University, 1989-1995
- Graduated with Honors (2 out of 500 students) at Juaquin Turina in 1989

### (4) Collaborators:

ZEUS Collaboration    <http://www-zeus.desy.de/>  
BABAR Collaboration   <http://www.slac.stanford.edu/cgi-wrap/colli>  
ATLAS Collaboration   <http://atlas.web.cern.ch/Atlas/ORGANISATION/Directory/alphabetic.html>  
CTEQ Collaboration    <http://www.phys.psu.edu/~cteq/>

### (5) Leadership roles:

#### Convenorships

- Convener of the ATLAS  $H \rightarrow WW, inv$  group (2008-present)
- Co-Convener of US ATLAS Standard Model and Higgs Physics group (2006-2007)
- Co-Convener of ATLAS  $H \rightarrow \gamma\gamma$  Group (2006-2008)
- Co-Convener of ATLAS  $W/Z + jets$  Group (2006-2008)

#### Committees and Task Forces

- Member of the US ATLAS Tier3 Task Force (2008-present)
- Member of US ATLAS Computing Resource Allocation Committee (2005-Present)
- Member of the CTEQ collaboration (2007-present)

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- Member of the Executive Committee of the UW Latino Faculty Staff Association (2007-present)
- Member of the ATLAS task force to establish guidelines for election of physics conveners (2002)

### Conferences

- Chair of LHC session of DAE-BRNS-HEP08 Symposium, December 2008.
- Chair of the top-physics session of PHENO2008, May 2008
- Co-convenor of Working Group Collider and Flavor Physics of WHEPP X, January, Chennai, India, January 2nd-13th 2008.
- Organizer of Physics Jamboree for Israel-ATLAS community in Tel Aviv University, February 2007
- Co-organizer of the North American Standard Model and Higgs Jamboree, Argonne National Laboratory, January 2007.
- Co-organizer of North American Standard Model and Higgs Workshop, Argonne National Laboratory, April 2006.
- Co-Convenor of Tevatron-LHC Connection Session at WIN03, Lake Geneva, WI, USA, 2003

### (6) **Advisor to Ph.D. students:**

- Xin Chen, PhD 2008, "Reconstruction of Missing ET and Search for a SM Higgs Boson via VBF in the  $H \rightarrow \tau\tau$  Decays in ATLAS"
- Yaquan Fang, PhD 2008, "Search for SM Higgs Decaying to Two Photons with the ATLAS Detector"
- Alden Stradling, PhD 2008, "An Examination of Backgrounds to Early-Run Minimum-Bias Events in ATLAS at the LHC"
- Joaquin Poveda PhD 2009 (co-advisor) "Energy Reconstruction in the Hadronic Tile Calorimeter and Early SUSY Fully Hadronic Searches in ATLAS"
- German Carrillo (co-advisor)
- Artanxa Ruiz (co-advisor)

### (7) **Top 10 Publications:**

1. Fragment Angular Distribution as a Probe of Fission Dynamics in Nuclei with Two Classes of Excited States, D.O.Eremenko, B.Mellado et al., *J.Phys.G: Nucl. Part. Phys.* **22**: 1077-1087 (1996)

2. ZEUS results on the measurement and phenomenology of  $F(2)$  at low  $x$  and low  $Q^{*2}$ .

By ZEUS Collaboration

*European Physical Journal C* **7**: 609-630 (1999) TOPCITE = 100+ with 217 cites

3. Exclusive photoproduction of  $J/\psi$  mesons at HERA.

By ZEUS Collaboration

*European Physical Journal C* **24**: 345-360 (2002) TOPCITE = 50+ with 97 cites

4. Measurements of inelastic  $J/\psi$  and  $\psi'$  photoproduction at HERA.

## Curriculum Vitae

By ZEUS Collaboration

*European Physical Journal C* **27**:173-188 (2003)

5. Prospects for Pentaquark Searches in  $e^+e^-$  Annihilations and Gamma Gamma Collisions, S. Armstrong, B. Mellado and Sau Lan Wu, *J.Phys.G* **30**:1801 (2004)

6. Prospects for the Search of a Standard Model Higgs Boson in ATLAS Using Vector Boson Fusion, S. Asai et al., *Eur. Phys. J., C* **32** (2004) 19-54 TOPCITE = 100+ with 102 cites

7. Prospects for the Observation of a Higgs Boson with  $H \rightarrow \tau^+\tau^- \rightarrow l^+l^- p_T$  associated with one high- $P_T$  jet at the LHC, B. Mellado, W. Quayle, Sau Lan Wu, *Physics Letters B* **611** (2005) 60-65

8. Search for the Charmed Pentaquark Candidate  $\Theta_c(3100)^0$  in  $e^+e^-$  Annihilations at  $\sqrt{s} = 10.58$  GeV

By BABAR Collaboration (B. Aubert et al.).

SLAC-PUB-11779, April 2006, Published in *Phys.Rev.D* **73**:091101 (2006)

9. Measurement of the Decays  $B^0 \rightarrow \bar{D}^0 p\bar{p}$ ,  $B^0 \rightarrow \bar{D}^{*0} p\bar{p}$ ,  $B^0 \rightarrow D^- p\bar{p}\pi^+$ , and  $B^0 \rightarrow D^{*-} p\bar{p}\pi^+$

By BABAR Collaboration (B. Aubert et al.)

SLAC-PUB-11933, July 2006, Published in *PRD-RC* **74**: 051101 (2006)

10. Feasibility of Searches for a Higgs Boson using  $H \rightarrow W^+ W^- \rightarrow l^+ l^- p(T)$  and High  $P(T)$  Jets at the Tevatron B. Mellado, W.Quayle and Sau Lan Wu, *Phys.Rev.D* **76**:093007,2007

Complete list of publications can be found on the following website:

<http://www.physics.wisc.edu/people/faculty/bmellado/bmellado-pubs.pdf>

### (8) Invited Talks at Conferences

1. "Fragment Angular Distributions for Fission Nuclei Having Two Classes of Excited States", Lomonosovskie Shtenia, Moscow, Russia, May 1995.
2. "Perturbative/Non-Perturbative QCD Interface in ep Physics", XXXIII-rd Rencontres de Moriond, Les Arcs, France, March 21-28, 1998.
3. "Diffractive Vector Meson Production at HERA", ICHEP00, Osaka, Japan, July 27-August 3, 2000.
4. "Diffractive Vector Meson Production at HERA", EPS01, Budapest, Hungary, July 2001.
5. "Prospects for Higgs Physics at LHC, HCP2002" (**Plenary**) Karlsruhe, Germany, October 3 2002.
6. "Tevatron/LHC Connection" WIN03, Lake Geneva, Wisconsin, USA, January 7th 2003.
7. "Higgs Physics at the LHC" (**Plenary**) PHENO2003, Wisconsin, USA, May 7th 2003.
8. "Vector Boson Fusion Studies in ATLAS" Les Houches, France, May 29th 2003.
9. "Experimental Wish-List N(N)LO tools" (**Plenary**) MC4LHC workshop, CERN, Geneva, July 9th 2003.
10. "K Factors in  $H \rightarrow ZZ^* \rightarrow 4l$ ", MC4LHC Workshop, CERN, Geneva, July 9th 2003.
11. "Tag Jets in Vector Boson Fusion" HERA4LHC Workshop, CERN, Geneva, Switzerland, March 27th 2004.

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12. "Higgs Reach through VBF with ATLAS", XXXIX Rencontres de Moriond, Les Arcs, France, April 2nd 2004.
13. "Prospects of Higgs Searches at the LHC" (**Plenary**) XVIIIth International Workshop on High Energy Physics and Quantum Field Theory, Russia, June 19th 2004
14. "Baryon Production and Pentaquark Searches at B factories" (**Plenary**) FPCP05, Daegu, Korea, August 10th 2004
15. "W,Z + jet studies at Tevatron relevant to Higgs Searches at the LHC", TEV4LHC Workshop, Fermi Lab, Chicago, USA, September 16th 2004
16. "Higgs + 1jet Signatures", TEV4LHC Workshop, BNL, February 3rd 2005
17. "Higgs and Vector Boson Fusion" (**Plenary**) TEV4LHV, BNL, February 4th 2005
18. "Higgs Searches at the LHC" (**Plenary**) Aspen Physics Center, August 22nd 2005.
19. "Challenges of the LHC" (**Plenary**) International School of Instrumentation, Istanbul, Turkey, September 9th 2005
20. "Higher Order QCD Corrections in  $H \rightarrow \tau\tau$  Analyses", TEV4LHC workshop, Fermi Lab, Chicago, USA, October 21 2005
21. "Higgs Production via VBF: Comparison between generators", MC4LHC workshop, CERN, Geneva, Switzerland, July 18th 2006
22. "SM Higgs Searches in the Early Phase of the LHC with ATLAS", LHC4ILC Workshop, Fermilab, Chicago, USA, April 12th 2007.
23. "Lectures on Higgs Physics at the LHC", (**Plenary, Lecture**) CTEQ School, Madison, USA, June 1-2 2007
24. "Jet Multiplicity and Background Extraction in Inclusive SUSY Analyses at the LHC", Pheno 2007, Madison, Wisconsin, USA, June 5th 2007.
25. "Higgs Physics at the LHC" (**Plenary**), WHEPP-X, Chennai, India, January 5th 2008.
26. "Model-independent search for Higgs at Atlas", Hidden Higgs Workshop, UC Davis, California, March 7th 2008.
27. "Status of Higgs Feasibility Studies at ATLAS", Pheno 2008, Madison, Wisconsin, April 28th 2008.
28. "UW-ATLAS Experiences with Condor", (**Plenary**), Paradyn / Condor Week, Madison, May 1st 2008.
29. "The CMS and ATLAS Detectors" Lecture", (**Plenary, Lecture**) Harish-Chandra Research Institute, India, December 8th 2008.
30. "Higgs Searches at the LHC", (**Plenary, Lecture**) Harish-Chandra Research Institute, December 9th 2008.
31. "Searches for Super-Symmetry at the LHC", (**Plenary, Lecture**) Harish-Chandra Research Institute, December 10th 2008.
32. "Searches for Beyond the Standard Model at the LHC", (**Plenary, Lecture**) Harish-Chandra Research Institute, December 11th 2008.
33. "Status of Preparation for Higgs at the LHC", (**Plenary**) DAE-BRNS-HEP08 Symposium, Banaras Hindu University, Varanasi, India, December 16th 2008.
34. "Searches for the Higgs at the LHC", (**Plenary, Two Lectures**) Indian Institute of Science Education and Research, Kolkata, India, December 19-20th 2008.

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35. “Feasibility of Standard Model Higgs Searches at the LHC” (**Plenary**), Workshop on measuring the Higgs properties at the LHC, University of Washington, Seattle, January 13<sup>th</sup> 2009.

### **(9) Seminars**

1. “Higgs at LHC”, University of Chicago, USA, October 13<sup>th</sup> 2003.
2. “Higgs searches at the LHC” Institute of Nuclear Research, Moscow, Russia, November 10<sup>th</sup> 2003.
3. “Higgs Physics at the LHC, Fermi Lab, Chicago, USA, February 9<sup>th</sup> 2005.
4. “Higgs Searches with ATLAS”, Cambridge University, UK, October 14<sup>th</sup> 2005.
5. “Higgs Searches with ATLAS”, Oxford University, UK, October 18<sup>th</sup> 2005.
6. “Higgs Searches with ATLAS”, Imperial College, UK, October 19<sup>th</sup> 2005.
7. “Higgs Physics with the ATLAS Detector at the LHC”, Michigan State University, January 17<sup>th</sup> 2006.
8. “Higgs Physics with the ATLAS Detector at the LHC”, University of Wisconsin, January 23<sup>rd</sup> 2006.
9. “Higgs Physics at the LHC”, University of California Irvine, February 2<sup>nd</sup> 2006.
10. “Higgs Physics at the LHC”, University of California San Diego, February 7<sup>th</sup> 2006.
11. “Higgs Physics with the ATLAS Detector at the LHC”, Harvard University, March 16<sup>th</sup> 2006.
12. “Higgs Physics with the ATLAS Detector at the LHC”, HEP Seminar, CIEMAT, Madrid, November 13, 2006
13. “Higgs Physics in ATLAS at the LHC”, HEP Seminar, Neve-Shalom, Israel, February 13<sup>th</sup> 2007.
14. “Higgs Physics in ATLAS at the LHC”, HEP Seminar, Technion, Haifa, Israel, February 14<sup>th</sup> 2007.
15. “Missing ET reconstruction in ATLAS”, HEP Seminar, University of Chicago, April 2<sup>nd</sup> 2007.
16. “Higgs Physics in ATLAS”, HEP Seminar, IFIC, Valencia, Spain, June 9<sup>th</sup> 2007.
17. “Feasibility of  $H \rightarrow WW + \text{Jet}$  at the Tevatron”, CDF Higgs discovery group, FermiLab, Chicago, September 14<sup>th</sup> 2007.
18. “Higgs Searches with the ATLAS Experiment at the LHC”, EPFL, Lausanne, February 29<sup>th</sup> 2008.
19. “Status of Higgs Feasibility Studies at ATLAS”, PSI, Zurich, Switzerland, November 11<sup>th</sup> 2008.
20. “Higgs Physics at ATLAS”, ETH/UZH, Zurich, Switzerland, November 12<sup>th</sup> 2008.
21. “Prospects of Higgs discovery at the LHC”, Yale University, January 27<sup>th</sup> 2009.

### **(10) Plenary talks in ATLAS workshops**

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1. "Higgs Searches in the Vector Boson Fusion Channels", The IV ATLAS Physics Workshop, Athens, Greece, May 25th 2003.
2. "Higgs Physics in ATLAS", US ATLAS Software Workshop, BNL, New York, USA, August 27th 2003.
3. "Higgs + 1 jet signatures", ATLAS Physics week, CERN, Geneva, Switzerland, November 11th 2004.
4. "Status and Outlook of  $H \rightarrow \gamma\gamma$  and  $H \rightarrow \tau\tau$ ", I North American ATLAS Physics Workshop, Tucson, Arizona, USA, December 21st 2004.
5. " $H \rightarrow \gamma\gamma$ ", V ATLAS Physics Workshop, Rome, Italy, June 7th 2005.
6. "Performance Requirements for (early) Higgs Discovery", II North American ATLAS Physics Workshop, Toronto, Canada, August 2nd 2005
7. "Object Based Missing Et Reconstruction", ATLAS Jet/tau/Etmiss Workshop, Victoria, 01/12/05 December 1st 2005.
8. "Object-Based Etmiss: Implementation in Athena", ATLAS Software Workshop, Orsay, France, December 8th, 2005.
9. "Performance Requirements for SM and Higgs", North American ATLAS SM and Higgs Workshop, April 27th 2006.
10. "Object-Based Etmiss: Implementation in Athena", Hadronic Calibration Workshop, Munich, Germany, May 3rd 2006.
11. "Overview of Missing ET in ATLAS", III North American ATLAS Physics Workshop, Boston, July 27th 2006.
12. "In-situ calibration of ETMiss and Tau", Calorimeter Calibration Workshop, Costa Brava, Spain, September 7th, 2006
13. "Higgs searches and distributed analysis using PROOF", The First ATLAS and NL-RF Regional Workshop, Moscow, Russia, February 19th 2008.
14. "Missing ET reconstruction in ATLAS", ATLAS Physics Workshop, Simon Fraser University, Vancouver, June 17th 2008.

### (10) **Talks in ATLAS Physics and Detector Performance Working Groups**

I have given 211 talks in ATLAS Physics Working Groups (Higgs, SUSY, Standard Model and Exotics) as well as detector performance groups (Jet/Missing Transverse Momentum) and other groups

The talks can be found on this link:

<http://indicosearch.cern.ch/search?cc=Conference+Contributions&p=Mellado&rg=25&jrec=1>

### (11) **Summary of Publications**

.....48 ATLAS Internal and Refereed Public Notes as Principal Author  
.....175 BaBar Physics Refereed Publications  
.....97 ZEUS Physics Refereed Publications  
.....6 Other Physics Refereed Publications  
.....19 Published Conference Proceedings  
.....1 Review paper

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**(12) Summary of Talks**

.....35 invited talks in conferences  
.....21 seminars  
.....14 plenary talks in ZEUS meetings  
.....14 plenary talks in ATLAS meetings  
.....211 internal working group talks in ATLAS workshops  
.....>250 internal working group talks in ATLAS workshops

**(13) In the Press**

Articles about my work in science

<http://www.uwalumni.com/home/heartofthematter.aspx>

<http://www.dailycardinal.com/article/21305>

<http://www.dailycardinal.com/article/20388>

Articles about my activities on UW campus in promotion of minorities

<http://www.diversity.wisc.edu/story.php?id=15814>

<http://www.news.wisc.edu/wisweek/22-Oct-2008/images/WW20081022.pdf>

<http://thelatinojournal.blogspot.com/2008/10/hispanic-faculty-and-student-ration.html>

<http://wispolitics.com/index.iml?Article=139604>

<http://www.themadisontimes.com/articles/local-news/campus-summit-addresses-growing-latino-campus-population>