

Jordan A. Goodman

Curriculum Vitae

I. Personal Information

Jordan Alvin Goodman

2208G Physical Sciences Complex, University of Maryland, College Park, MD 20742

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I.B. Academic Appointments at UMD

2015 - present	Distinguished University Professor, Univ. of Maryland
1990 – 2015	Professor of Physics, Univ. of Maryland
1985 - 1990	Associate Professor, Univ. of Maryland
1980 - 1985	Assistant Professor, Univ. of Maryland

I.C. Administrative Appointments at UMD

1999 – 2006	Chair, Department of Physics, Univ. of Maryland
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I.E. Educational Background

Undergraduate:	B.S., Physics, University of Maryland - 1973
Graduate:	M.S., Physics, University of Maryland - 1975
	Ph.D., Physics, University of Maryland - 1978

II. Research, Scholarly and Creative Activities

US-Spokesperson for HAWC Gamma Ray Observatory 2008-2010, 2014-present
Principal Investigator for HAWC Gamma Ray Observatory 2008- present
Co-Spokesperson/PI for MILAGRO Gamma Ray Experiment 1992 -present
IceCube Collaboration – Km³ Neutrino Observatory at the South Pole 2003-present
Super-Kamiokande Neutrino Experiment - Kamioka, Japan 1994-2004
Spokesperson/PI for CYGNUS Gamma-Ray Experiment at Los Alamos 1985-94
Fermilab Experiment E710 - Measurement of elastic scattering and total cross section of p p at the Fermilab collider 1985-1991
Fermilab Experiment E672 - Dimuon and Jet experiment 1983-1985
Fermilab experiment E594 to measure cosmic ray hadrons and muons, 1982-84
Delayed hadron experiment, College Park, MD 1979-1985

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Measurement of the composition of flux of cosmic rays at 2900 M, Sacramento Ridge Cosmic Ray Laboratory (SRCRL), U. of MD., Sunspot, NM, 1973-1978
Search for massive new stable particles in cosmic rays, SRCRL, 1976-1978
Measurement of the primary composition above 10^{13} eV by hadron arrival time studies, SRCRL 1976-1978

V. Awards, Honors and Recognition

The 2016 Breakthrough Prize in Fundamental Physics
Distinguished University Professor, University of Maryland, 2015 July
Distinguished Alumni Award, Department of Physics, 2015 May
CMNS Board of Visitors Creative Educator Award 2013
University of Maryland President's Medal 2009
Malmstrom Lecture – Hamline University 2010
Fellowship American Association for the Advancement of Science 2009
Founding Fellow Joint Space Institute (UM) 2010
Atlantic Coast Conference Teaching Scholar 2009
CMPS Distinguish Alumni Award 2008
Fellow of the American Physical Society 1997
University of Maryland Presidential Award for Outstanding Service to the Schools 1994

V.2 Teaching Awards

Faculty Excellence in Teaching Award Lecture - CTE 2009
Kirwan Prize for Undergraduate Education 2004
Fellowship UM Academy of Excellence in Teaching and Learning 2002-present
Richtmyer Lecture Prize– American Physical Society 2001
USM Regents Award for Excellence in Teaching 2000
UMCP Distinguished Scholar-Teacher Award 1999-2000

II.C. Articles in Refereed Journals

Search for TeV Gamma-Ray Emission from Point-like Sources in the Inner Galactic Plane with a Partial Configuration of the HAWC Observatory By HAWC Collaboration (A.U. Abeysekara et al.). arXiv:1509.05401 [astro-ph.HE]. 10.3847/0004-637X/817/1/3. Astrophys.J. 817 (2016) 1, 3.

Evidence for Astrophysical Muon Neutrinos from the Northern Sky with IceCube By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1507.04005 [astro-ph.HE]. 10.1103/PhysRevLett.115.081102. Phys.Rev.Lett. 115 (2015) 8, 081102.

A combined maximum-likelihood analysis of the high-energy astrophysical neutrino flux measured with IceCube By IceCube Collaboration (M.G. Aartsen et

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al.). arXiv:1507.03991 [astro-ph.HE]. 10.1088/0004-637X/809/1/98. *Astrophys.J.* 809 (2015) 1, 98.

Measurement of the Atmospheric ν_e Spectrum with IceCube By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1504.03753 [astro-ph.HE]. 10.1103/PhysRevD.91.122004. *Phys.Rev. D91* (2015) 122004.

Searches for Time Dependent Neutrino Sources with IceCube Data from 2008 to 2012 By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1503.00598 [astro-ph.HE]. 10.1088/0004-637X/807/1/46. *Astrophys.J.* 807 (2015) 1, 46.

Flavor Ratio of Astrophysical Neutrinos above 35 TeV in IceCube By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1502.03376 [astro-ph.HE]. 10.1103/PhysRevLett.114.171102. *Phys.Rev.Lett.* 114 (2015) 17, 171102.

The IceProd Framework: Distributed Data Processing for the IceCube Neutrino Observatory By M.G. Aartsen et al.. arXiv:1311.5904 [cs.DC]. j.jpdc.2014.08.001. *J.Parallel Distrib.Comput.* 75 (2015) 198–211.

Search for Prompt Neutrino Emission from Gamma-Ray Bursts with IceCube By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1412.6510 [astro-ph.HE]. 10.1088/2041-8205/805/1/L5. *Astrophys.J.* 805 (2015) 1, L5.

Determining neutrino oscillation parameters from atmospheric muon neutrino disappearance with three years of IceCube DeepCore data By IceCube Collaboration (M. G. Aartsen et al.). arXiv:1410.7227 [hep-ex]. 10.1103/PhysRevD.91.072004. *Phys.Rev. D91* (2015) 7, 072004.

Atmospheric and astrophysical neutrinos above 1 TeV interacting in IceCube By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1410.1749 [astro-ph.HE]. 10.1103/PhysRevD.91.022001. *Phys.Rev. D91* (2015) 2, 022001.

Search for gamma-rays from the unusually bright GRB 130427A with the HAWC Gamma-ray Observatory By HAWC Collaboration (A.U. Abeysekara et al.). arXiv:1410.1536 [astro-ph.HE]. 10.1088/0004-637X/800/2/78. *Astrophys.J.* 800 (2015) 2, 78.

Development of a General Analysis and Unfolding Scheme and its Application to Measure the Energy Spectrum of Atmospheric Neutrinos with IceCube By IceCube Collaboration (M.G. Aartsen et al.). arXiv:1409.4535 [astro-ph.HE]. 10.1140/epjc/s10052-015-3330-z. *Eur.Phys.J. C75* (2015) 3, 116.

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Observation of Small-scale Anisotropy in the Arrival Direction Distribution of TeV Cosmic Rays with HAWC. (A. U. Abeysekera, et. al.) The Astrophysical Journal. 10.1088/0004-637X/796/2/108. Astrophys.J. 796 (2014) 2, 108.

Milagro Limits and HAWC Sensitivity for the Rate-Density of Evaporating Primordial Black Holes (A. A. Abdo et. al.) arXiv:1407.1686 [astro-ph.HE].10.1016/j.astropartphys.2014.10.007. Astropart.Phys. 64 (2014) 4-12.

VAMOS: a Pathfinder for the HAWC Gamma-Ray Observatory. (A. U. Abeysekera, et. al.) (2014) (62). *Astroparticle Physics*. 125. DOI. 0.1016/j.astropartphys.2014.08.004.

Evidence for High-Energy Extraterrestrial Neutrinos at the IceCube Detector, IceCube Collaboration (M.G. Aartsen et al.). Nov 20, 2013. Science 342, 1242856 (2013) DOI: 10.1126/Science.1242856

Measurement of Atmospheric Neutrino Oscillations with IceCube, IceCube Collaboration (M.G. Aartsen et al.). May 16, 2013. 6 pp. Phys.Rev.Lett. 111 (2013) 081801 DOI: 10.1103/PhysRevLett.111.081801

First observation of PeV-energy neutrinos with IceCube, IceCube Collaboration (M.G. Aartsen et al.). Apr 19, 2013. 7 pp. Phys.Rev.Lett. 111 (2013) 021103, DOI: 10.1103/PhysRevLett.111.021103

Measurement of the Atmospheric ν_e flux in IceCube, IceCube Collaboration (M.G. Aartsen et al.). Dec 2012. 7 pp. Phys.Rev.Lett. 110 (2013) 151105, DOI: 10.1103/PhysRevLett.110.151105

Search for dark matter annihilations in the Sun with the 79-string IceCube detector, IceCube Collaboration (M.G. Aartsen et al.). Dec 2012. 7 pp. Phys.Rev.Lett. 110 (2013) 131302 DOI: 10.1103/PhysRevLett.110.131302

Search for Galactic PeV Gamma Rays with the IceCube Neutrino Observatory, IceCube Collaboration (M.G. Aartsen et al.). Oct 2012. 15 pp., Phys.Rev. D87 (2013) 062002, DOI: 10.1103/PhysRevD.87.062002

Observation of Cosmic Ray Anisotropy with the IceTop Air Shower Array, IceCube Collaboration (M.G. Aartsen et al.). Oct 2012., Astrophys.J. 765 (2013) 55, DOI: 10.1088/0004-637X/765/1/55

IceTop: The surface component of IceCube, Abbasi, R.; Abdou, Y.; Ackermann, M.; et al. (IceCube Collaboration) NIM Volume: 700 Pages: 188-220 DOI: 10.1016/j.nima.2012.10.067 Published: FEB 1 2013

Lateral distribution of muons in IceCube cosmic ray events Abbasi, R.; Abdou, Y.; Ackermann, M.; et al. (IceCube Collaboration) Phys Rev D Volume: 87 Issue: 1

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Article Number: 012005 DOI: 10.1103/PhysRevD.87.012005 Published: JAN 7 2013

Search for ultrahigh-energy tau neutrinos with IceCube Abbasi, R.; Abdou, Y.; Ackermann, M.; et al. (IceCube Collaboration) Phys Rev D Volume: 86 Issue: 2 Article Number: 022005 DOI: 10.1103/PhysRevD.86.022005 Published: JUL 26 2012

The design and performance of IceCube DeepCore, Abbasi, R.; Abdou, Y.; Abu-Zayyad, T.; et al. (IceCube Collaboration) ASTROPARTICLE PHYSICS Volume: 35 Issue: 10 Pages: 615-624 DOI: 10.1016/j.astropartphys.2012.01.004 Published: MAY 2012

An absence of neutrinos associated with cosmic-ray acceleration in gamma-ray bursts (R. Abbasi et al.) Nature 484, 351–354 (19 April 2012) doi:10.1038/Nature11068

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Spectrum and Morphology of the Two Brightest Milagro Sources in the Cygnus Region: MGRO J2019+37 and MGRO J2031+41 (A. Abdo et al.) ApJ 753 159 2012 doi:10.1088/0004-637X/753/2/159

On the sensitivity of the HAWC observatory to gamma-ray bursts (Abeysekera et al.) Astroparticle Physics 35, Issue 10, May 2012, 641-650

Observation and Spectral Measurements of the Crab Nebula with Milagro (A. Abdo et al.) 2012 ApJ 750 63

Background studies for acoustic neutrino detection at the South Pole. By IceCube Collaboration (R. Abbasi et al.). Astropart.Phys. 35 (2012) 312-324.

“Time-Dependent Searches for Point Sources of Neutrinos with the 40-String and 22-String Configurations of IceCube”. By IceCube Collaboration (R. Abbasi et al.) Astropart.Phys. 35 (2012) 744 (2012)

Measurement of Acoustic Attenuation in South Pole Ice. By IceCube Collaboration (R. Abbasi et al.). Astropart.Phys. 34 (2011) 382-393.

Measurement of the atmospheric neutrino energy spectrum from 100 GeV to 400 TeV with IceCube. By IceCube Collaboration (R. Abbasi et al.). Phys.Rev. D83 (2011) 012001.

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Time-Integrated Searches for Point-like Sources of Neutrinos with the 40-String IceCube Detector. By The IceCube Collaboration (R. Abbasi et al.). *Astrophys.J.* 732 (2011) 18.

Limits on Neutrino Emission from Gamma-Ray Bursts with the 40 String IceCube Detector. By IceCube Collaboration (R. Abbasi et al.). *Phys.Rev.Lett.* 106 (2011) 141101.

First search for atmospheric and extraterrestrial neutrino-induced cascades with the IceCube detector. By IceCube Collaboration (R. Abbasi et al.). *Phys.Rev.* D84 (2011) 072001.

Search for Dark Matter from the Galactic Halo with the IceCube Neutrino Observatory. By IceCube Collaboration (R. Abbasi et al.). *Phys.Rev.* D84 (2011) 022004.

Search for neutrino-induced cascades with five years of AMANDA data. By R. Abbasi, et al.. *Astropart.Phys.* 34 (2011) 420-430.

Constraints on high-energy neutrino emission from SN 2008D. By IceCube Collaboration (R. Abbasi et al.). *Astron.Astrophys.* 527 (2011) A28.

Constraints on the Extremely-high Energy Cosmic Neutrino Flux with the IceCube 2008-2009 Data. By IceCube Collaboration (R. Abbasi et al.). *Phys.Rev.* D83 (2011) 092003, Erratum-ibid. D84 (2011) 079902.

A Search for a Diffuse Flux of Astrophysical Muon Neutrinos with the IceCube 40-String Detector. By IceCube Collaboration (R. Abbasi et al.). *Phys.Rev.* D84 (2011) 082001.

Observation of Anisotropy in the Arrival Directions of Galactic Cosmic Rays at Multiple Angular Scales with IceCube. By IceCube Collaboration (R. Abbasi et al.). *Astrophys.J.* 740 (2011) 16.

Search for a Lorentz-violating sidereal signal with atmospheric neutrinos in IceCube. (R. Abbasi et al.) *Phys.Rev.D82:112003*, 2010. [arXiv:1010.4096]

Search for relativistic magnetic monopoles with the AMANDA-II neutrino telescope. By R. Abbasi, et al., *Eur.Phys.J.C69:361-378*, 2010.

The first search for extremely-high energy cosmogenic neutrinos with the IceCube Neutrino Observatory. (R. Abbasi et al.) *Phys.Rev.D82:072003*, 2010. [arXiv:1009.1442]

Measurement of the Anisotropy of Cosmic Ray Arrival Directions with IceCube. (R. Abbasi et al.) *Astrophys.J.718:L194*, 2010. [arXiv:1005.2960]

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The Energy Spectrum of Atmospheric Neutrinos between 2 and 200 TeV with the AMANDA-II Detector. (R. Abbasi et al.) *Astropart.Phys.*34:48-58, 2010. [arXiv:1004.2357]

Limits on a muon flux from Kaluza-Klein dark matter annihilations in the Sun from the IceCube 22-string detector. (R. Abbasi et al.) *Phys.Rev.D*81:057101, 2010. [arXiv:0910.4480]

Measurement of sound speed vs. depth in South Pole ice for neutrino astronomy. (R. Abbasi et al.) *Astropart.Phys.*33:277-286, 2010. [arXiv:0909.2629]

Calibration and Characterization of the IceCube Photomultiplier Tube. (R. Abbasi et al.) *Nucl.Instrum.Meth.A*618:139-152, 2010. [arXiv:1002.2442]

Search for muon neutrinos from Gamma-Ray Bursts with the IceCube neutrino telescope (R. Abbasi et al.) *Astrophys.J.*710:346-359, 2010. [arXiv:0907.2227]

Milagro Observations of TeV Emission from Galactic Sources in the Fermi Bright Source List (A. Abdo et. al.) *Ap. J. Letters* Apr 2009 700:L127-L131,(2009)

First Neutrino Point-Source Results From the 22-String IceCube Detector. (R. Abbasi et al.) May 2009. *Astrophys.J.*701:L47-L51,2009.

Extending the search for neutrino point sources with IceCube above the horizon. (R. Abbasi et al.) Nov 2009. *Phys.Rev.Lett.*103:221102,2009.

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Limits on a muon flux from neutralino annihilations in the Sun with the IceCube 22-string detector. (R. Abbasi et al.) *Phys.Rev.Lett.*102:201302,(2009)

Determination of the Atmospheric Neutrino Flux and Searches for New Physics with AMANDA-II. (R. Abbasi et al.) *Phys.Rev.D*79:102005,(2009)

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The IceCube Data Acquisition Subsystem: Signal Capture, Digitization, and Timestamping (R. Abbasi et al.) *Nuclear Instruments and Methods in Physics Research A* 601 (2009) 294 A316

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The Large Scale Cosmic-Ray Anisotropy as Observed with Milagro. (A.A. Abdo et al.) *Astrophys.J.*698:2121-2130,(2009)

Discovery of Localized regions of Excess 10-TeV Cosmic Rays By Milagro Collaboration” (A. Abdo et. al.) *Phys. Rev. Lett.* 101, 221101 (2008)

A Measurement of the Spatial Distribution of Diffuse TeV Gamma-Ray Emission from the Galactic Plane with Milagro By Milagro Collaboration” (A. Abdo et. al.) *Astrophysical Journal* 688, 1078 (2008)

“TeV Gamma-Ray Sources from a Survey of the Galactic Plane with Milagro” By Milagro Collaboration” (A. Abdo et. al.) *Ap. J. Letters* August 2007 664, L91

“Discovery of TeV Gamma-Ray Emission from the Cygnus Region of the Galaxy” By Milagro Collaboration” (A. Abdo et. al.) *Ap. J. Letters* March 658, L33, 2007

Detection of Atmospheric Muon Neutrinos with the IceCube 9-String Detector. By The IceCube Collaboration (A. Achterberg et al.). May 2007. *Phys.Rev.D*76:027101,2007

Search for neutrino-induced cascades from gamma-ray bursts with AMANDA. By IceCube Collaboration (A. Achterberg et al.). Mar 2007. 38pp. *Astrophys.J.*

Multi-year search for a diffuse flux of muon neutrinos with AMANDA-II. By IceCube Collaboration (A. Achterberg et al.). May 2007. 40pp. Published in *Phys.Rev.D*76:042008,2007

“Milagro Constraints on Very High Energy Emission from Short Duration Gamma-Ray Bursts by the Milagro Collaboration” (A. Abdo et. al) *Astrophysical Journal* 666(2007), pages 361 – 367

Search for neutrino-induced cascades from gamma-ray bursts with AMANDA. By IceCube Collaboration (A. Achterberg et al.). Mar 2007. 38pp. Published in *Astrophys.J.*664:397,2007.

“Five years of searches for point sources of astrophysical neutrinos with the AMANDA-II neutrino telescope.” By IceCube Collaboration (A. Achterberg et al.). Nov 2006. 32pp. Published in *Phys.Rev.D*75:102001,2007.

“Discovery of TeV Gamma-Ray Emission from the Cygnus Region of the Galaxy” By Milagro Collaboration” (A. Abdo et. al.) *Ap. J. Letters* March 658, L33, 2007e-Print Archive: ASTRO-PH 0611691

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Observation Of The Anisotropy Of 10-Tev Primary Cosmic Ray Nuclei Flux With The Super-Kamiokande-I Detector. By Super-Kamiokande Collaboration (G. Guillian et al.). *Phys. Rev. D*, vol. 74 no. 6 (2007), pp. 062003

Milagro Constraints on Very High Energy Emission from Short Duration Gamma-Ray Bursts by the Milagro Collaboration (A. Abdo et. al) *Astrophysical Journal* 666(2007), pages 361 - 367

Limits on the High-Energy Gamma and Neutrino Fluxes from the SGR 1806-20 Giant Flare of 27 December 2004 with the AMANDA-II Detector
A. Achterberg et al. (IceCube Collaboration) *Phys. Rev. Lett.* 97, 221101 (2006)

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"Three Flavor Neutrino Oscillation Analysis Of Atmospheric Neutrinos In Super-Kamiokande." J. Hosaka et al., *Phys.Rev.D*74:032002,2006.

"Recent results from the Milagro gamma ray observatory", Goodman, JA ,
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"Evidence for TeV gamma-ray emission from a region of the galactic plane",
Atkins, R; Benbow, W; Berley, D; et al., *PHYSICAL REVIEW LETTERS*, 95 (25):
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“Search for very high energy gamma rays from WIMP annihilations near the Sun with the Milagro detector” Atkins, R; Benbow, W; Berley, D; et al., PHYSICAL REVIEW D, 70 (8): Art. No. 083516 OCT 2004

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“Evidence for an oscillatory signature in atmospheric neutrino oscillations”, Ashie, Y; Hosaka, J; Ishihara, K; et al., PHYSICAL REVIEW LETTERS, 93 (10): Art. No. 101801 SEP 3 2004

“Limits on the neutrino magnetic moment using 1496 days of Super-Kamiokande-solar neutrino data”, Liu, DW; Ashie, Y; Fukuda, S; et al., PHYSICAL REVIEW LETTERS, 93 (2): Art. No. 021802 JUL 9 2004

“TeV gamma-ray survey of the northern hemisphere sky using the Milagro observatory” Atkins, R; Benbow, W; Berley, D; et al., ASTROPHYSICAL JOURNAL, 608 (2): 680-685 Part 1 JUN 20 2004

“Status of the IceCube Neutrino Observatory”, Ahrens, J; Bahcall, JN; Bai, X; et al., NEW ASTRONOMY REVIEWS, 48 (5-6): 519-525 APR 2004

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Observation of TeV Gamma Rays from the Crab Nebula with Milagro Using a New Background Rejection Technique R. Atkins et al. Astrophysical Journal 595 (2003) 803-811

Observation of GeV Solar Energetic Particles from the 1997 November 6 Event Using Milagrito A. Falcone et al. Astrophysical Journal 588 (2003) 557-565

The High-Energy Gamma-Ray Fluence and Energy Spectrum of GRB 970417a from Observations with Milagrito R. Atkins et al. Astrophysical Journal 583 (2003) 824-832

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“Limit on the neutrino magnetic moment using 1496 days of Super-Kamiokande-I solar neutrino data” D. W. Liu et al. [Super-Kamiokande Collaboration] arXiv:hep-ex/0402015

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“Precise measurement of the solar neutrino day/night and seasonal variation in Super-Kamiokande-I” M. B. Smy et al. [Super-Kamiokande Collaboration] Phys. Rev. D 69, 011104 (2004) [arXiv:hep-ex/0309011]

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“Observation of TeV gamma rays from the Crab nebula with Milagro using a new background rejection technique” R. Atkins et al. [Milagro Collaboration] Astrophys. J. 595, 803 (2003) [arXiv:astro-ph/0305308]

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“Search for anti- ν_e from the sun at Super-Kamiokande-I” Y. Gando et al. [Super-Kamiokande Collaboration] Phys. Rev. Lett. 90, 171302 (2003) [arXiv:hep-ex/0212067]

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“The MILAGRO gamma-ray observatory” J. E. McEnery et al. [Milagro Collaboration] *AIP Conf. Proc.* 558, 549 (2001) Prepared for International Symposium on High-Energy Gamma-Ray Astronomy, Heidelberg, Germany, 26-30 Jun 2000

“Constraints on neutrino oscillations using 1258 days of Super-Kamiokande solar neutrino data” S. Fukuda et al. [Super-Kamiokande Collaboration] *Phys. Rev. Lett.* 86, 5656 (2001) [arXiv:hep-ex/0103033]

“Solar B-8 and he p neutrino measurements from 1258 days of Super- kamiokande data” S. Fukuda et al. [Super-Kamiokande Collaboration] *Phys. Rev. Lett.* 86, 5651 (2001) [arXiv:hep-ex/0103032]

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Adams, A. with J. A. Goodman and GRANDE Collaboration, "VHE and UHE Gamma Ray Astronomy with GRANDE, OG 4.2-8

Proceedings Les Arcs(1989)

Shukla, S with J. A. Goodman., et al., E710 Collaboration, "Measurements on Small Angle P anti-P Elastic Scattering at $S^{1/2} = 1.8$ TEV" 87-90.

Proceedings Castiglione della Pescaia (1989)

Giacomelli, G., with J. A. Goodman et al., E710 Collaboration, "Elastic Scattering and Total Cross-Section at the Fermilab Collider", 436-443.

Proceedings Storrs 4th Meeting of Division of Particles and Fields of the APS(1988)

B. L. Dingus with J. A. Goodman et al., "Observation of Hercules X-1 at Energies Above 50-TEV", 252-254.

Proceedings Boston(1988)

T. J. Haines with J. A. Goodman et al., The CYGNUS Collaboration "Ultra-high-Energy Signals From Hercules X-1", 644-651.

Proceedings Erice(1988)

Yodh, G. B. with J. A. Goodman et al., "Grande: An Experiment to Search For Cosmic Gamma Rays and Cosmic Neutrinos", 423-430.

Yodh, G. B. with J. A. Goodman et al., "Ultra-high-Energy Radiation From Hercules X-1: New Physics Above 100 TEV?", 215-233.

Jordan A. Goodman

Proceedings Venice(1988)

Bratton, C. with J. A. Goodman et al., "The GRANDE Facility for the Study of Astrophysical Sources and High-Energy Particle Interactions", 233-292.

Proceedings Los Angeles Observational Neutrino Astronomy (1987)

Sobel, H. with J. A. Goodman et al., "GRANDE: A Gamma Ray and Neutrino Detector," 255-261.

Proceedings Ashland Neutrino Masses and Neutrino Astrophysics (1987)

Nagle, D. E. with J. A. Goodman et al., "Detection of 10^{14} EV Gamma Rays from Cygnus X-3 During 1986," 438-441.

Proceedings of the 20th International Cosmic Ray Conference, Moscow, 1987

Goodman, M.C. with J.A. Goodman et al., "A Measurement of the Hadronic Component of Air Showers in A A Fine Grained Calorimeter"

Goodman, M.C. with J.A. Goodman, "A Measurement of the Angular Resolution of Air Showers A Using the Muonic Component at Ground Level"

Gomez, R. et al., "Hadron - Nucleus Interactions at High-Energy." Presented at 2nd Int. Workshop on Local Equilibrium in Strong Interaction Physics, Santa Fe, N.M., April 8-11, 1986. Published in Santa Fe Strong Int. Workshop 1986:239 (1986 (Halliwell author in Proceedings)

Proceedings of the 19th International Conference on Cosmic Rays, La Jolla, USA, 1985

II.D.4. Other

Goodman, J.A. et al., "Study of Muons Near Shower Cores at Sea Level using the E594 Neutrino Detector," Vol. 7, p. 114 (1985)

Goodman, J.A. et al., "Composition of Cosmic Rays near the Bend (1015eV) from a Study of Muons in Air Showers at Sea Level, Vol. 2, p. 205 (1985)

Goodman, J.A. et al., "Composition of Cosmic Rays near the Bend (1015eV) from a Study of Hadrons in Air Showers at Sea Level, Vol. 2, p. 201 (1985)

Goodman, J.A. et al., "Measurement of the Response of a Hadronic Calorimeter to Beams of Pions and Protons of 1 to 10 GeV/c," (1985)

Jordan A. Goodman

Goodman, J.A. et al., "Search for Heavy Long-lived Particles in High Energy Cosmic Rays," (1985)

Proceedings Baton Rouge (1984)

Goodman, J. A., "New Developments in Track Finding", 160-169.

Proceedings Salt Lake City Cosmic Ray Workshop (1984)

Goodman, J. A., "Design and Cost Considerations for a Surface Array at Dugway," 126-131.

Proceedings of the 18th International Conference on Cosmic Rays, Bangalore, India, 1983

Freudenreich, H.T. with J. A. Goodman et al., "Composition of Primary Cosmic Rays at Energies $\sim 10^{15}$ - 10^{16} GeV Analysis of Low Energy Muons in Air Showers,"

OG 4-6

Yodh, G.B. with J. A. Goodman et al., "Composition of Primary Cosmic Rays at Energies $\sim 10^{15}$ - 10^{16} GeV--Analysis of High Energy Muons in Air Showers," OG 4-7

Mincer, A.I. with J. A. Goodman et al., "Search for Long-Lived Massive Particles in Cosmic Ray Air Showers of Energies 10^5 - 10^7 GeV, HE 2.2-17

Goodman, J.A. et al., "An Experimental Study of Hadrons and Muons near Shower Cores Using E594 Neutrino Detector at Fermilab," EA 1.1-41

Freudenreich, H.T. with J. A. Goodman et al., "Energy and Lateral Distribution of the Hadronic Component near Cores of Air Showers of Energies $\sim 10^5$ - 10^7 GeV, EA 1.1-43

Jordan A. Goodman

Mincer, A.I. with J. A. Goodman et al., "A Study of Arrival Time Structure of Low Energy Hadrons Near Air Shower Cores at Sea Level," EA 1.1-51

Mincer, A.I. with J. A. Goodman et al., "A Study of Fluctuations in Signals from Scintillator Detectors in an Iron Calorimeter for Low Energy hadrons," T2-19

(Other contributed papers in 1982 and 1983)

Goodman, J.A., "Design and cost considerations for a surface array at Dugway," Proc. of Cosmic Ray Workshop, Utah 1983, Ed. by T.K. Gaisser, Bartol Research Foundation, p. 126

Goodman, J.A. et al., "Composition of Primary Cosmic Rays at 1015 - 1016eV," in Proc. of Workshop on Very High Energy Interactions, Univ. of Pennsylvania (1982)

Yodh, G.B. with J. A. Goodman et al., "High Energy Muon Experiments and the Composition of Primary Cosmic Rays, *ibid.*

Proceedings of the 17th International Conference on Cosmic Rays, Paris, France, 1981

Cowsik, R. with J. A. Goodman et al., "Evidence for the Dominance of Heavy Nuclei in Cosmic Rays at 106GeV," OG 2-24

Goodman, J.A. et al., "Search for Long-lived Massive Particles in Cosmic Ray Air Showers," HE 2-5

Goodman, J.A. et al., "Report on Flight of Goddard-University of Maryland Proton-Helium Spectrometer," T2-10

Goodman, J.A. et al., "Study of Time Structure of Energetic Hadrons Near Air Shower Cores," OG 2.2-5

Proceedings of the 20th International Conference on High Energy Physics, Madison, Wisconsin, 1980

Ellsworth, R.W. with J. A. Goodman et al., "Simulation of Centauros"

Jordan A. Goodman

Proceedings of the 16th International Conference on Cosmic Rays, Kyoto, Japan, 1979

Goodman, J.A. et al., "Observation of Delayed hadrons in Air Showers - New Massive Particles?" HE 205

Goodman, J.A. et al., "Composition of Primary Cosmic Rays Above 10¹³eV from the Study of Time Distribution of Energetic Hadrons near Air Shower Cores - Data and Results," EA 1-7

Goodman, J.A. et al., "The Study of Delayed Energetic Hadrons near Air Shower Cores," Paper presented at the Durham meeting of the Cosmic Ray Physics Division of the American Physical Society, September 1978

Proceedings Newark Cosmic Rays and Particle Physics (1978)

Goodman, J. A. et al., "Observation of Energetic Delayed Hadrons in Extensive Air Showers - New Massive Particles", 207-220.

Proceedings Muenchen Fourteenth International Cosmic Ray Conference (1975)

Ellsworth, R. W. with J. A. Goodman et al., "Measurement of the Flux of charged Hadrons at 2900-M," 2528-2531.

II.E. Conferences, Workshops, and Talks

II.E.1. Keynotes

Status and Results from the HAWC Gamma Ray Observatory – The HAWC Inauguration – March 20, 2015, Puebla Mexico

II.E.2. Invited Talks

HAWC Status and UHE Cosmic Rays, Aspen Winter Physics Conference, Aspen, Co, January 2016

Status and Results from the HAWC Gamma Ray Observatory – Brown University Colloquium, Providence Rhode Island, November 2015

Status and Results from the HAWC Gamma Ray Observatory – Aachen University Colloquium, Aachen Germany, June 2015

Status and Results from the HAWC Gamma Ray Observatory – Carnegie Mellon University/Pitt Colloquium, April 2015

Jordan A. Goodman

Physics with HAWC – Air Shower Detection at High Altitude, Paris, France May 2014

Cosmic Ray Anisotropy at TeV Energies - Erice, Sicily 2014

First Light in HAWC – IPA Symposium Madison WI, May 2013

The HAWC Gamma-Ray Observatory - Centenary Symposium 2012: Discovery of Cosmic Rays, University of Denver, June 2012

Joint Space-Sciences Mini-Symposium – April 6, 2012 “Cosmic Rays, from Galactic to Ultra High Energy; What Do We Know About Their Sources?”

University of Delaware Colloquium – Feb 15, 2012, “Our Changing View of the TeV Sky”

Astrophysical Multimessenger Observatory Network – Inaugural Workshop, October 2011, State College, PA – “The HAWC Observatory”

University of Maryland President’s Tailgate, September 17, 2011, “Neutrino Astronomy in 7 Minutes”

Seminar Shanghai Jiao Tong University, August 15, 2011 “Our Changing View of the TeV Sky”

Guillermo Haro Workshop, Puebla, Mexico, July 12, 2011 “Cosmic Ray Anisotropy at TeV Energies”

Goddard – Maryland Interaction Day, June 17, 2011, “The Status of HAWC”

University of Maryland Alumni Board of Governors, May 14, 2011, “Neutrino Astronomy at the South Pole”

Marquee Public Lecture –University of Maryland, April 12, 2011, “The Future of Global Energy and Climate”

SnowPAC Conference on High Energy Astrophysics Snowbird, Utah February 3, 2011 – “AGN with HAWC”

Colloquium, University of Wisconsin, Madison, October 15, 2010 – Gamma-Ray Astronomy with Milagro and HAWC

Jordan A. Goodman

Colloquium, Michigan State University, October 7, 2010 – Neutrino Astronomy at the South Pole

XVI International Symposium on Very High Energy Cosmic Ray Interactions (ISVHECRI 2010) June 30, 2010 – Cosmic Ray Anisotropy at TeV Energies

Malmstrom Lecture – Hamline University, St. Paul, Mn May 7, 2010 “Neutrino Astronomy at the South Pole”

Invited Talk Snowpac Conference on High Energy Astrophysics Snowbird, Utah March 23, 2010 – “Galactic Sources with Milagro and HAWC”

Invited Talk Defense Intelligence Agency - Dec 15, 2009 “Neutrino Astronomy with IceCube”

Seminar “Recent Results from Milagro and the Future with HAWC” Georgia Tech University, November 2009

ACC Teaching Scholar Presentation “Marquee Science Courses” Georgia Tech University, November 2009

Highlight Talk “Recent Results from Milagro” 31st International Cosmic Ray Conference, July 2009, Lodz Poland

Public Lecture - Neutrino Astronomy at the South Pole - April 2009 Riderwood

Seminar - Neutrino Astronomy at the South Pole - April 2009 American Physical Society Seniors

CTE Faculty Excellence in Teaching Lecture “Marquee Science Courses – A Successful Example of Cross-Disciplinary Course Development”. University of Maryland - March 2009

Colloquium “Recent Results from Milagro” Karlsruhe Laboratory, Karlsruhe Germany, February 2009

Seminar “Recent Results from Milagro” Imperial College London, February 2009

Invited Talk “Physics with HAWC” -4th Heidelberg International Symposium on High Energy Gamma-Ray Astronomy July 7-11, 2008, Heidelberg, Germany

Jordan A. Goodman

Invited Talk “TeV Cosmic Ray and Gamma Ray Astrophysics” April APS Meeting
St. Louis April 2008

Colloquium “Neutrino Astrophysics with IceCube”, Naval Research Laboratory,
Washington DC April 2008

Invited Talk “Neutrino Astrophysics with IceCube”, Symposium on Neutrino
Physics and Neutrino Cosmology, The Chinese University of Hong Kong, Jan
2007

Invited Talk “Recent results from Milagro. 12th Mexican School on Particles and
Fields and 6th Latin American Symposium on High Energy Physics (VI-
Silafae/XII-MSPF), Puerto Vallarta, Mexico, Nov 2006

Invited Talk “Study of galactic gamma ray sources with Milagro”
2nd Workshop on TeV Particle Astrophysics, Madison, Wisconsin, 28-31 Aug
2006

Invited Lecturer 15th Course: “Astrophysics at Ultra-high Energies” Ettore
Majorana Centre, Erice, Sicily, Italy, June 2006

Invited Talk “MiniHAWC – A New Detector for Gamma-Ray Astronomy”,
Workshop on Future PRC-U.S. Cooperation in High Energy Physics, Beijing,
China, June 11 - 18, 2006

Invited Lecturer, “Neutrino Astrophysics with IceCube”, MEPHI-Volga Summer
School, May 2006, Moscow, Russia

Public Lecture “150 Years of Physics” – Maryland Day, University of Maryland,
College Park, MD, April 2006

Colloquium – “Neutrino Astronomy” – University of Massachusetts, Amherst, MA,
April 2006

Colloquium – “MiniHAWC – A New Detector for Gamma-Ray Astronomy”, UNAM,
Mexico City, January 2006

Colloquium - “MiniHAWC – A New Detector for Gamma-Ray Astronomy”, Instituto
Nacional de Astrofisica, Optica y Electronica, Puebla, Mexico, January 2006

Colloquium - “MiniHAWC – A New Detector for Gamma-Ray Astronomy”,
Benemérita Universidad Autónoma de Puebla, Puebla, Mexico, January 2006

Jordan A. Goodman

Invited Talk “Recent Results from MILAGRO” 29th International Cosmic Ray Conference, Pune, India, August 2005

Colloquium “Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe”, UMBC May 2005

Colloquium Bartol Institute “Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe”, University of Delaware - April 20, 2005

Invited Talk – “Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe” Smithsonian Institution - Jan 2005

Invited Talk “Neutrino Astronomy” - Recontre de Moriond - La Theile, Itay March 8, 2005

Colloquium “Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe”, Gettysburg College, Gettysburg, PA, October 2004

Colloquium “Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe”, Bryn Mawr College, Bryn Mawr, PA, September 2004

Invited Talk – “Recent Results from Milargo” XIII International Symposium on Very High Energy Cosmic Ray Interactions, Pylos, Greece, September 6-13, 2004

Invited Lecturer 14th Course: "Astrophysics at Ultra-high Energies" Ettore Majorana Centre, Erice, Sicily, Italy, June 2004

Seminar at McGill University, Montreal, Canada, January 1999

Seminar - Space Physics Group University of Maryland, Oct. 1997

Jordan A. Goodman

Presentation to Dr. Jacobson's class, Sept. 1997

Department Graduate Seminar on Particle Astrophysics, September 1996, 1998

Super-Kamiokande, U.S. Physics Olympics Team, May 1996

High Energy Physics Seminar, University of Maryland, October 1995

"CYGNUS - The Other Air Shower," Seminar, Univ. of Chicago, October 1991

"Review of UHE and VHE Gamma Ray Astronomy, High Energy Physics Seminar, U. of MD Physics Dept., January 1991

"MILAGRO - A New for TeV Gamma Ray Astronomy, High Energy Physics Seminar, U. of MD. Physics Dept., November 1990

"Status of Anomalous Muon Observations from Astro Physics Objects," Joint Institute of Theoretical Physic/Brookhaven National Laboratory Seminar, SUNY, October, 1990

"UHE gamma Ray Astronomy-Recent Results from CYGNUS Experiment," Seminar at Boston University Physics Department, May 1990

Recent results in UHE Gamma Ray Astronomy - Pennsylvania State University, University Park, Physics and Astronomy Seminar, January 1990

"UHE Gamma Ray Astronomy--Past, Present and Future," Bartol Research Institute, U. of Delaware Astrophysics Seminar, September 1989

"Anomalous Muon Content of UHE Air Showers from Hercules X-1," Cornell University, May 1989

"Hercules X-1 New Physics above 100 TeV?" University of Michigan, Ann Arbor, High Energy Physics Seminar, January 1989

"Anomalous Muon Content of Ultra High Energy Air Showers from HER X-1," Rutgers University, November 1988

"Muons from Hercules X-1," Brookhaven National Laboratory, July 1988

"New Results on Hercules X-1 and Cygnus X-3," Goddard Space Center Astrophysics Seminar, GSFC, Greenbelt, January 1988

Jordan A. Goodman

"Hercules X-1 Results from the CYGNUS Experiment," High Energy Physics Seminar, Cal Tech., Pasadena, CA, March 1987

High Energy Physics Seminar, Fermilab, Batavia, IL, April 1987

"Results from the CYGNUS Experiment at Los Alamos," Goddard Space Center Astrophysics Seminar, GSFC, Greenbelt, September 1986

Nuclear Physics Seminar, University of Maryland, September 1985

"Composition at the Knee," Goddard Space Flight Center and University of Maryland Seminar, 1984

"Report on Leipz International High Energy Physics Conference," High Energy Seminar 1984

High Energy Cosmic Ray Seminar, University of Utah, February 1984

"Results from the Maryland Cosmic Ray Experiments," University of Maryland HE Seminar, September 1983

"High Energy Cosmic Ray Air Showers," High Energy Physics Seminar, Bartol Institute, University of Delaware, 1982

"Unusual Events in Cosmic Ray Interactions," High Energy Seminar, Johns Hopkins University, Baltimore, MD, February 1982

"Search for Exotic Phenomena in Cosmic Rays," High Energy Seminar, University of Maryland, 1980

II.E.13. Colloquia

Colloquium Super-k Atmospheric and Solar Neutrino Results, Saclay, France, March 2000

Colloquium at NYU, Recent Super-K Results, May 1999

Colloquium at Temple University, Philadelphia, November 1998

Jordan A. Goodman

Invited talk at the 6th International Conference on Advanced Technology and Particle Physics , Como, Italy, October 1998

Colloquium at University of Pisa, Italy, October 1998

Colloquium - University of Houston, April 1998

Colloquium at Oxford University, England, May 1998

Colloquium at University of Leeds, England, May 1998

Colloquium at Institute for Cosmic Ray Research, Japan, January 1998

Colloquium - University of West Virginia, Dec. 1997

Colloquium - Thomas Johnson Laboratory, April 1997

Colloquium - Department of Physics, University of Wisconsin, October 1994

Colloquium - Department of Physics, Univ. of Arkansas, April 1994

Colloquium - College of Science, University of Central Arkansas, April 1994

II.E.14. Historical Conferences, Workshops, Talks (10+ years ago)

Invited Talk "VHE GRBs with Milagro" - Recontre de Moriond – Les Arcs, France
March 2003

Invited Talk "Who Needs Yesterday's Papers When Today's Are on the Internet? Preservation from the Physicists Perspective" – University of Maryland Libraries Symposium", University of Maryland, College Park, MD, January 2003

Colloquium "Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe", National Institutes of Standards and Technology, Gaithersburg, MD, January 2003

Invited Lecturer 13th Course: "Astrophysics at Ultra-high Energies" Ettore Majorana Centre, Erice, Sicily, Italy, June 2002

Colloquium "Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe", University of California, Riverside, CA, April 2002

Jordan A. Goodman

Colloquium "Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe", Columbia University, New York, April 2002

Colloquium "Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe", Lafayette College, Easton PA, February 2002

Invited Talk "Recent Results from Super-K (and K2K)", Aspen Winter Physics Conference, Aspen, CO January 2002

Richtmyer Award Lecture, "Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe", American Association of Physics Teachers, Philadelphia, PA, January 2002

Colloquium "Neutrinos, Dark Matter and the Cosmological Constant - The Dark Side of the Universe", Catholic University of America, Washington, DC, November 2001

Distinguished Scholar-Teacher Lecture, "Ghosts in the Universe," UM Physics Department, March 2000

Maryland Day talk - "Up close and personal with a great idea," University of Maryland, April 2000

Invited Super-K talk, Moriond Conference, Les Arcs, France, March 2000

Invited Talk "Astrophysics with Milagro", Division of Particles and Fields, Albuquerque, NM, August 1994

"Data on Particle Physics," CHIPS talk, November 1992

"The Use of Water Detectors for Detecting Air Showers," Workshop in the Measurement of the Highest Energy Air Showers, Paris, April 1992

"UHE Gamma Ray Astrophysics. Where have all the Sources Gone?", Colloquium, Univ. of Utah, Salt Lake City, January 1992

Jordan A. Goodman

"Observational Priorities for Ground Based Experiments," International Conference on Particle Acceleration in Astrophysics, Bartol Inst. of Research, Univ. of Delaware, December 1991

"MILAGRO - A Water Cherenkov Detector for 1 TeV to 1 PeV Cosmic Rays" presented at International Conference on High Energy Gamma-Ray Astronomy, Ann Arbor, Michigan, October, 1990

"Recent Results in UHE γ -Ray Astronomy: Results from the CYGNUS Experiment," presented at 1990 Snowmass Summer Study - Research Directions for the Decade, July 1990

"UHE Gamma Ray Astronomy-Recent Results from CYGNUS Experiment," Washington, DC APS Meetings, April 1990

"Experimental Searches for Astrophysical Point Sources Above 1 TeV," Goddard Conference on Cosmic Ray Program for the 1990's, November, 1989

"Strange Emissions from Her X-1," Colloquium, National Capital Astronomers, Smithsonian Institution, October, 1989

"Current Status of UHE Gamma Ray Astronomy," University of Arkansas, Little Rock, Workshop on the Physics and Experimental Techniques of High Energy Neutrinos and the VHE and UHE Gamma Ray Particle Astrophysics, May, 1989

"MUPPET Project," American Physical Society Meeting, Miami University, Oxford, Ohio, April, 1989

"A New Experiment to Measure Neutral Rapidity," Utah Cascade Simulation Workshop, University of Utah, Salt Lake City, Utah, March 1989

"Hercules X-1 New Physics above 100 TeV," Johns Hopkins Applied Physics Laboratory, Colloquium, January, 1989

"Hercules X-1 New Physics above 100 TeV?," Univ. of Maryland Physics Colloquium, December, 1988

"Hercules X-1," Univ. of Minnesota Colloquium, October 1988

"On Line Data Analysis--Smart PC Workstations," PC Workstation talk, Raleigh, NC, Conference on Computers in Physics Instruction, August 1988

"Report on UHE Gamma Ray Astrophysics," Snowmass, Colorado, Workshop on HEP in the 1990's, July, 1988

Jordan A. Goodman

"CYGNUS Experiment at Los Alamos," Report on HEPAP subcommittee on Gamma Ray Astrophysics, Baltimore, MD, April 1988

"Results from the CYGNUS Experiment at Los Alamos," Euro Physics Meeting, Uppsala, Sweden, June 1987

"Results above 100 TeV from the CYGNUS Experiment at Los Alamos," Ultra High Energy Gamma Ray Workshop, Salt Lake City, Utah, January 1987

"CYGNUS Experiment at Los Alamos," International Conference on Intersection between Particle and Nuclear Physics, Lake Louise, Canada, May 1986

"New Developments in Track Finding," LSU Conference on Cosmic Rays on the Space Platform, October 1984

"Cosmic Rays," Physics Colloquium, Pennsylvania State University, 1984

"Composition of Cosmic Rays at 10^{15} eV", Physics Colloquium, University of Maryland, 1984

"Electronic Design for a Surface Array at Dugway," Utah Air Shower Workshop, Salt Lake City, January 1983

"Composition of Cosmic Rays at 10¹³ - 10¹⁵eV," Invited lecture at Workshop on Very High Energy Interactions, Univ. of Pennsylvania, Ken Lande, Chairman (1982)

"Research in Cosmic Ray Physics," Physics Colloquium, University of Maryland, Baltimore County, September 1979

"Observation of Energetic Delayed Hadrons - New Massive Particles?", Gordon Conference on Elementary Particle Interactions, Andover, NH, August 1979, Henry Frish, Chairman

II.J. Sponsored Research

List source, title, amount awarded, time period and role (i.e. principal investigator or co-investigator) in reverse chronological order or its inverse. If there are co-investigators, please list these.

II.J.1. Grants

PI – HAWC Operations NSF \$3.2M 2013-2018

PI - Particle Astrophysics at the University of Maryland NSF \$1.4M 2013-2016

PI – HAWC Construction NSF - \$6.8M 02/01/2011 – 01/31/2015

Jordan A. Goodman

PI – Personnel Support for HAWC Construction and Commissioning - NSF
\$1.2M 10/01/2010 – 5/31/2013

PI MRI: Development of the HAWC-256 Wide-Field Gamma Ray Detector - NSF
\$605,000 with Matching \$1.05M 09/01/2008 to 08/31/2011

Co-PI Particle Astrophysics at the University of Maryland NSF 06/01/2008 -
05/31/2011 - \$2.5M

PI Particle Astrophysics with Milagro National Science Foundation 06/01/2006 -
06/30/2008 Total Funding: \$830,000

Co-PI Particle Astrophysics with the South Pole IceCube Neutrino Observatory,
Nation Science Foundation, 09/15/2005 08/31/2007, Total Funding: \$750,000

PI Particle Astrophysics with Milagro National Science Foundation 05/01/2003 -
06/30/2006 Total Funding: \$1,350,000

PI Operation of the Milagro Gamma Ray Observatory National Science
Foundation 06/01/2004 - 05/31/2006-- Total Funding: \$1,984,339

PI Consulting services for preparation of proposal., - South Dakota Science and
Technology Authority 07/01/2004 - 06/30/2005-- Total Funding: \$4,000

PI GANN: Physics Education 08/15/2001 - 08/14/2005-- Total Funding: \$819,000

P.I - Milagro Infrastructure and Collaboration Support at Los Alamos - Start -
06/15/01 - \$785k total over 3 years

P.I. - Milagro - A Water-Cherenkov Detector for TeV Gamma Ray Astrophysics –
– Start - 02/01 - \$1.7M total for 3 years.

III. Teaching, Mentoring and Advising.

III.A. Courses Taught

Include courses taught in the last five years. Indicate approximate enrollments and any unusual formats.

Honors 378N – Fall 2012, 2013, 2014 – (Developed New Research Course for
the NSA)

Phys/ASTR498P, PARTICLE ASTROPHYSICS, Spring 2015,

Honors 238W – Spring 2012

Physics 105 – 2008, 2009, 2010, 2011, 2013 (Developed New Marquee Course -
2008)

Physics 111 – Fall 2002

Physics 104 - Spring 1999 (Developed New Course -1999)

Physics 174 - Spring 1997- Spring 1998, 2010, 2011 (Developed New Course -
1997)

Jordan A. Goodman

Physics 262A - 1995, Spring 1996, Fall 1996 (Revised and Taught)
Physics 263A - 1995, Spring 1996, Fall 1996 (Revised and Taught)
Physics 106 - 1985, 1986, 1987, 1988, 1993, 2006, 2007, 2008
Physics 272 - Fall 1989; Spring, 1991, 1992, 1993
Physics 273 - Spring 1990; Fall 1990, 1991
Physics 121 - Fall 1992
Physics 121, 122 Labs. 1987
Physics 161 - 1980
Physics 171 - Spring 1989
Physics 262 - 1979, 1981, 1983
Physics 263 - 1979, 1981
Physics 296 - 1988
Physics 429/621 - 1982, 1983, 1984, 1985

III.B. Teaching Innovations

III.B.5. Course or Curriculum Development

Phys/ASTR498P.; PARTICLE ASTROPHYSICS New Course Spring 2015,
Honors 378N – Fall 2012, 2013 – (Developed New Research Course for the
NSA)
Physics 105 – 2008, 2009, 2010, 2011, 2013 (Developed New Marquee Course -
2008)
Physics 104 - Spring 1999 (Developed New Course -1999)
Physics 174 - Spring 1997- Spring 1998, 2010, 2011 (Developed New Course -
1997)

III.C. Advising: Research or Clinical

Graduate Advisor 1981-1982; 1987-present

III.C.3. Doctoral

Advisor for many Goddard Thesis Students

IV. Service and Outreach

IV.B. Committees, Professional & Campus Service

IV.B.1. Campus Service – Department

Chair – Department of Physics – 1999- 2006
Lab Revision Committee 2013 -
Acting Co-Director Joint Space-Sciences Institute 2011-2012
Departmental APT Committee 2010-2012
Departmental Priorities Committee 2007-2008
Lecture Demo Search Committee 2008
Teaching Interview Committee 2006-present

Jordan A. Goodman

Chair Physics Financial Director Search Committee 2008
Co-Chair, Physics Majors Laboratory Committee 1996-1999
Chair, Physics Faculty Assembly 1994-1999
Physics Department Laboratory Committee 1994-1999
Physics Undergraduate Education Committee 1994-97
Undergraduate Recruitment Presentations 1997, 1998
Search Committee - Joint Physics & Education Professorship 1997
PhD. Final Oral Committees (Stark and Bartlett) 1994
Teaching Assistant Orientation and Training 1980-present
Chair, Assistant Professor Search Committee 1994-95
Department Qualifying Problems and Oral Exam 1994
Physics Chair Search Committee 1993
Physics Salary Committee - 1992-1993
Priorities Committee - 1992-1995
Co-Chair Physics Colloquium Committee - 1991-92
Graduate Education Committee 1987-1993
Honors Committee 1981-1988 - Chairman 1986-1988
High School Liaison Committee 1980-present
Teaching Evaluation 1980-1988
Chairman: Technical Committee for High Energy Computer 1984-1996
Physics Department Computer Network 1987-present
Physics Olympics 1979-1988
Student Physics Society Advisor 1981-1986
Chairman, Intramural Athletics 1977-1982
Physics Program Review Committee 1982
Course Chairman Physics 161, 262, 263 - 1981
Graduate Laboratory Chairman 1982-1984, 1988
Revision of Physics 121 curriculum 1993

IV.B.2. Campus Service – College

Chair, Search Committee for IPST Director 2013
Chair, Dean Review for the School of Public Policy 2013
Chair, CMNS Associate Dean for Research Search 2012
Chair, Search Committee for Geology Chair 2011
Chair CMPS Development Officer Search Committee 2008-2009
Chair IPST Director Review Committee 2007
Physical Sciences Core Review Committee 2007
Chair – CMPS Development Director Search 2004
Chair – IREAP Director Search 2001
Member – IPST Chair Search 2001
Engineering College retreat on curriculum revision 1993
College Teaching Committee 1993
Search Committee for Assistant Dean of CMPS 1987
Departmental Review Committee 1982-1983
Physics Department Chairman Selection Committee 1985
CMPS Junior Science and Humanities Symposium - 1992

Jordan A. Goodman

IV.B.3. Campus Service – University

Chair- Elect University Senate 2015-16 Chair in 2016-2017

Chair University Research Council 2008-2014

Marquee Public Lecture on Global Energy 2011, 2012

Campus Facilities Naming Committee 2012-present

Football Tailgate Research Presentation “Neutrino Physics in 7 Minutes”, Sept.

2011

Chair ORAA Review Committee 2009-2010

Chair Geology Chair Search 2010

Member Senate Merit Review Committee 2009-2010

Sub-Group Chair OIT Review Committee 2009-2010

Marquee Science Courses - Presentation to UM Board of Trustees – 2010

Marquee Course Committee 2007 - present

Chair - ORAA Director Search 2004

Campus Senate 1981-1983, 1987-1990, 1991-1993, 1996 – 1998, 2008-present

Board of Governors, University of Maryland Alumni Association, 1995- present

Member Orientation Review Committee 2006

Panelist Worldwide Event November 2007

Gemstone Advisory Committee 2002 - present

College Park Scholars Advisory Committee 2001- present

Orientation Speaker Summer 2006 - present

Speaker New Faculty Orientation 2004-Present

Chair CS Chair Review Committee 2005

Member VP for Research Search 2002

Chair University of Maryland Alumni Advocates Committee –2000-2001

Campus APT Committee, 1997 - 1998

Chair, Campus Senate Research Committee 1998-1999

Organizing Committee, Terrapin Pride Day 1997-98

Academic Advocates Committee, University Alumni Association 1996

Chair, Student Affairs Committee - Campus Senate 1991-1993

Technology & Innovation Week Laboratory Contact 1995

Keynote Speaker at Junior Science and Humanities Symposium for the State of Maryland, College Park, March 1994.

Panelist for Teaching Matters, Sponsored by LILLY-CTE Teaching Fellows, April 1994

Large Class TQI Committee - 1994

UMCP Clerical Award Committee - 1994

Summer Orientation Team - Undergraduates, July 1994.

Transfer Student Initiative Committee - 1992-1995

Minority Student Orientation 1993

New Student Orientation 1993

Campus Committee to review instructors/Lecturers 1992-1993

Panel for Revitalizing Education through Revaluing Teaching at College Park, March 1993

Jordan A. Goodman

Subcommittee on Course and Program Evaluation 1989-1991 (Pease Implementation) General Education Committee 1988-1991 (Pease Implementation)
Campus Committee on Future Academic Computing 1989
Search Committee for Assist. Director of Computer Science Center for Networking 1989
Search Committee for Dean of Undergraduate Education 1987-1988
Instructional Computing Fair UMCP 1987
Lecturer in Honors 358 "Celebration of Learning" 1983
Member of MUPPET project 1984-87
Member of FULCRUM project 1984-87
Middle States Evaluation Curriculum Committee 1985-1986
Presentation of Councilors for Gifted and Talented Students 1986
Presentation to Gifted and Talented Minority Students 1986
Presentation to American-Soviet Exchange Students, AAPT, Univ. of MD., 1989
Represented UMCP Faculty before the Board of Regents 1987
Research Presentation of AAPT Workshops 1985, 1986, 1987, 1988
Organizing Committee - Maryland at Risk Day - 1991
Workshop for Maryland at Risk Day - 1991
Workshop for Transfer Students - 1992
Member of Panel discussion regarding Ways to Enhance Undergraduate Education at UMCP - 3/92

.B.8. Other Non-University Committees, Memberships, Panels, etc.

Review Panel DOE Early Career Awards 2013
Review Panel DOE BigBOSS experiment 2011
Evaluator for the Intel (& formerly Westinghouse) Science Talent Search 1983-present
Quarknet – program for high school teachers 2003- present
Review Panel for DoE Non-Accelerator Programs at DoE Laboratories 2010
Review Panel for MIT High Energy Physics DoE Program 2010
Review Panel for DoE Early Career Awards 2009
Chair, Virginia Tech Physics Department Review Committee 2008
Chair, University of Utah Physics Department Review Committee 2006
HEPAP Sub-panel on University Programs 2006 - 2008
Head of Organizing committee for NeSS2002 meeting for the NSF 2002
SAGENAP member (NSF) 1998-2000, 2002-2003
External Advisor Board for the HIRES experiment 2002-present
IceCube review panel 2001
NSF Panel on Underground Science 2001
National Organizing Committee for 1999 International Cosmic Ray Conference
1997 - 1999
Principal Investigator of Travel Grant for International Cosmic Ray Conference
1995 -1999
Member, Scientific & Educational Council, Maryland Academy of Sciences, 6/92-present

Jordan A. Goodman

NSF Review Panel on the Borexino Experiment 1997
State Task Force on Teachers Education 1993
Reviewed many proposals for NSF and DoE
National Research Council, Particles Panel of Astronomy and Astrophysics, 1989-1990
National Science Foundation--Science and Technology Center Review, 1988
National Science Foundation Science and Technology Center Site Visit Team, Princeton University, Univ. of Penn., 1988
National Science Foundation Review Committee for Calculus Reform Proposals, 1990
Scientific Advising Committee for Little Rock Workshop on Physics and Experimental Techniques of High Energy and VHE and UHE Gamma Ray Particle Astrophysics, Univ. of Arkansas, Little Rock, Arkansas, May 1989
Scientific Advising Committee for Michigan Workshop on UHE and VHE γ -ray Astronomy, October 1990
Organizing Committee for Utah Cascade Simulation Workshop, University of Utah, Salt Lake City, Utah, March 1989
Member Science, Math and Computer Science Magnet Program Oversight Committee of the Montgomery Board of Education 1983-1986
Organizing Committee for October 1992 Astrophysics Meeting - Goddard/UMD - 1992
Advisor to Montgomery County Physics Teachers Association --Presented a Workshop on using demonstrations in teaching of basic physics - 1982

IV.F Community & Other Service

Competing in the Intel Science Talent Search, Montgomery Blair HS, 2013
Research Presentation to U.S. Physics Olympics Team, 1987-present
Presentation on STEM Careers, Rockville High School, 2011
Presentation at Watkins Mill High School, 2011, 2012
Presentation at Clarksburg High School, 2010, 2009, 2008, 2007
Presentation at Blake, High School, February 2009, February 2008, May 2007
Keynote Speaker, VIP K-16 workshop, UM Shady Grove, November 2005
Presentations to Physics classes at Bronx High School of Science – 2001, 2003
Presentations to Physics classes at Stuyvesant High School (NYC)– 2001, 02, 03, 05
Presentations at Quince Orchard High School, 2004, 2005, 2006
Presentation to AP Physics Classes at Richard Montgomery High School, 2003
Presentation to AP Physics Classes at Churchill High School, 2003
Presentation to AP Physics Classes at Thomas Jefferson High School May 2002
“Teachers as Scholars” Course for High School Teachers, November 2003
Keynote speaker Science Breakfast, Hyattsville Middle School, March 1997
Judge Montgomery County Science Fair, 1985-present
Presentations on "How to do a Successful Westinghouse Project" - Col. Zadok Magruder High School, Montgomery Blair High School, Walt Whitman High School, Thomas Jefferson High School 1996 - 1998
Grand Judge, Montgomery Blair Science Fair 1990, 1991, 1992

Jordan A. Goodman

Lectures on Photography and Optics for High School Students in Montgomery and Prince George's County Public Schools, 1986-1988
Lecture on Ultra High Energy Gamma Ray Astronomy to Montgomery County Magnet students at Montgomery-Blair High School, March 1989
Presentation on "Coping with College Life" to UMCP residence halls, 1988, 1989, 1990
Montgomery County Public Schools Science Convocation, 1986
Research tutorial to American Association of Physics Teachers, 1984
TGIP presentation at JFK High School "Quarks, Leptons and the Structure of Matter, 1985
Light and Optics for Gifted and Talented Montgomery County Public Schools, 1986
Flower Valley PTA Executive Committee 1989-present
Presentation on "Electromagnetism," at Magruder High School, 1991
Presentation on "Optics," at Brook Grove Elementary School, 1991
Presentation on "Electromagnetism," at Flower Valley School, 1991
Presentation on "Sound" at Flower Elementary School, 1992
Presentation to Howard County Public School Physics Teachers on "Inexpensive Demonstrations," 1993
Presentation on "Russia" to Wood Middle School, 1993
Presentation on "Electricity and Magnetism" at Wood Middle School, 1993
Presentation on "Newton's Laws" at Laytonsville Elementary School, 1993
Presentation on "Newton's Laws" at Laytonsville Elementary School, May 1994
High School dissemination Conference on Successful Magnet and Special Program Practices, March 1994
Testified Montgomery County Council on Global Access for Schools 1994
Presentation at Fields Road Elementary School on "Light and Color" 1994
Presentation at Blair High School "How to make a successful Westinghouse project" 1994
Keynote speaker, "Science Night", Stedwick elementary, October 1994
Keynote speaker at "Science Awards Breakfast", Hyattsville Middle School 1994
Speaker for US Physics Olympic team 1994, 1995
Science Fair Judge, Piney Branch Elementary School, April 1995
Presentation at Germantown Elementary School, October 1995
Participant in Career Day, Hoover Middle School, December 6, 1995

Grand Judge, Silver Spring Community Science Fair 1996, (Blair, Einstein, Kennedy, Springbrook High Schools) March 20, 1996
Presentation Walt Whitman High School, What Judges Look for at Westinghouse Competition, October 15, 1996
Presentation Thomas Jefferson High School about Westinghouse Competition, April 96
Presentation Rockville High School, Photography and Optics, 1996