

## Curriculum Vitae of Brenda L. Dingus May 2016

Office: Los Alamos National Lab, P-23  
SM-30 Bikini Atoll Rd, MS H803  
Los Alamos, NM 87545

Phone: (505)667-0400  
Cell: (505)500-2701  
Email: [dingus@lanl.gov](mailto:dingus@lanl.gov)

### EDUCATION

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#### **Ph.D. in Experimental Cosmic-Ray Physics, 1988**

University of Maryland, College Park, MD.

Dissertation: "Search for Ultra-High Energy Radiation from Cygnus X-3 and Hercules X-1"

Dissertation advisor was Prof. Gaurang B. Yodh

#### **B. S. in Physics with Academic Distinction and Physics Departmental Honors, 1982**

Harvey Mudd College, Claremont, CA.

### EXPERIENCE

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#### **HAWC Operations Manager 2015- present**

Managing the continuous operations and maintenance of the detector. Also directing the installation of outrigger upgrade funded by LANL LDRD.

#### **HAWC US Spokesperson, LANL, 2010-2014**

First elected spokesperson of HAWC and served the maximum 2 term limit. Led the 100+ scientist collaboration during the construction phase.

#### **HAWC Deputy Project Manger, LANL, 2011-2014**

Managed the on-site installation of equipment at HAWC and the procurements associated with DOE Office of Science and LANL LDRD funding.

#### **Milagro Run Manager, LANL, 2002-2008**

Calibration, installation of outrigger detectors, >90% on time, yearly repairs. Organized shifts.

#### **LANL Staff Scientist 2002-present**

Managed group of LANL scientists working on gamma-ray astrophysics. Supervised postdocs Andrea Albert, J. Patrick Harding, Patrick Younk, John Pretz, Petra Huentemeyer, Sabrina Casanova, Gary Walker and Ph.D. students Peter Karn and Chuan Chen.

#### **NASA Interdisciplinary Scientist for the GLAST mission, LANL, 2000-2009**

One of four scientists selected by NASA peer-reviewed proposals to represent the scientific community on the GLAST Science Working Group. This NASA funding also supported theoretical calculations with postdoc Sabrina Casanova and EGRET gamma-ray burst analysis with grad student Magda Gonzalez.

#### **Assoc. Prof. of Physics, University of Wisconsin Madison, 2000-2002**

Analysis of early Milagro data and EGRET data on gamma-ray bursts. Supervised Ph.D. students Robert Atkins and Magda Gonzalez and postdocs Julie McEnery and Robert Laird. Taught physics for pre-med students and undergraduate optics.

#### **Asst. then Assoc. Prof of Physics, University of Utah, 1996-2000**

Continued EGRET analysis with 5 successful NASA proposals. Joined Milagro collaboration obtaining funding from NSF and Research Corporation to study cosmic ray composition. Founding member of 1<sup>st</sup> executive committee of the Four Corners Section of the American Physical Society. Organizer and editor for the 26<sup>th</sup> International Cosmic Ray Conference in Salt Lake City, 1999. Taught graduate mechanics and

undergraduate introductory astronomy and physics.

**EGRET Research Scientist, University Space Research Assoc., NASA/Goddard, 1991-1996**

Led the gamma-ray burst analysis of the EGRET data discovering the highest energy emission from gamma-ray bursts. Performed analysis and developed software tools for rapid notifications of flaring sources and for inclusion in catalog publications. Also, prototyped xenon gas drift chambers for a proposed future gamma-ray telescope.

**National Research Council Fellow, NASA/ Goddard, 1989-1990**

Constructed and tested the first full scale xenon proportional chamber prototype of the X-ray Timing Explorer.

## HONORS

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2013	LANL Performance Award for Leading the Construction of HAWC
2010	Fellow of Los Alamos National Lab
2008	LANL Star Award
2006	Fellow of the American Physical Society (APS)
2000	Presidential Early Career Award for Scientists and Engineers (PECASE)
1997	Research Innovation Award

## PROFESSIONAL SERVICE

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**Elected Professional Positions**

2015-2018	Chair-Line of the LANL Fellows
2007-2010	Secretary / Treasurer of APS Division of Astrophysics (DAP)
2001-2003	Executive Committee Member of the DAP of the APS
2002-2005	Executive Committee Member of the High Energy Astrophysics Division of the American Astronomical Society
1997-2000	Executive Committee Member of the 4 Corners Section of the APS

**Advisory Committee Membership**

2016-2019	The Astrophysics Subcommittee of The NASA Advisory Committee
2008-2012	NASA's SWIFT Gamma-Ray Burst Users Committee
2008-2010	University Space Research Association Astronomy and Space Physics Science Council
2005-2008	The Astrophysics Subcommittee of The NASA Advisory Committee
2004-2005	NASA's Structure and Evolution of the Universe Advisory Committee
2003-2007	External Advisory Board of Kavli Institute for Cosmology at the University of Chicago
2003, 2006	Member of Committee of Visitors panel review of NSF Physics Division
2000-2009	NASA's GLAST Science Working Group
2000-2002	NASA's Astronomy and Physics Working Group
1996-1999	NASA's GLAST Science Facility Team
1996-2000	NASA's Compton Gamma-Ray Observatory Users Committee

**Panel Reviewer**

DOE, NSF, NASA, Science Foundation Ireland

## SELECT PUBLICATIONS (147 total with >11000 citations, h-index of 51)

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- "Search for TeV Gamma-Ray Emission from Point-like Sources in the Inner Galactic Plane with a Partial Configuration of the HAWC Observatory", Abeysekara, A.U. & HAWC collaboration, *Astrophysical Journal*, 817, 3 (2016)
- "Milagro limits and HAWC sensitivity for the rate-density of evaporating Primordial Black Holes", Abdo, A.A. et al. & the Milagro and HAWC collaboration, *Astroparticle Physics*, 64, 4 (2015)
- "Sensitivity of HAWC to high-mass dark matter annihilations", Abeysekara, A.U. & the HAWC collaboration, *Physical Review D*, 9012002 (2015)

- “Search for Gamma Rays from the Unusually Bright GRB 130427A with the HAWC Gamma-Ray Observatory”, Abeysekara, A. U. & HAWC Collaboration, *Astrophysical Journal*, 800,78 (2015)
- “Observation of Small-scale Anisotropy in the Arrival Direction Distribution of TeV Cosmic Rays with HAWC”, Abeysekara, A.U. & the HAWC collaboration, *Astrophysical Journal*, 796, 108 (2014)
- “Sensitivity of the High Altitude Water Cherenkov detector to sources of multi-TeV gamma rays”, Abeysekara, A. U. & the HAWC collaboration, *Astroparticle Physics*, 50, 26, (2013)
- “The First Fermi-LAT Gamma-Ray Burst Catalog”, Ackermann, M. & the Fermi collaboration, *Astrophysical Journal Supplements*, 209, 11, (2013)
- “Observation and Spectral Measurements of the Crab Nebula with Milagro”, Abdo, A. A. & the Milagro collaboration, *Astrophysical Journal*, Volume 750, 63 (2012)
- “Constraints on the Emission Model of the ‘Naked-eye Burst’ GRB 080319B”, Abdo, A. A. & the Milagro collaboration, *Astrophysical Journal Letters*, Volume 753, L31 (2012)
- “On the sensitivity of the HAWC observatory to gamma-ray bursts”, Abeysekara, A. U. & the HAWC collaboration, *Astroparticle Physics*, 35, 641-650 (2011)
- “A limit on the variation of the speed of light arising from quantum gravity effects”, Abdo, A.A. & Fermi Collaboration, *Nature*, 462, 331, (2009)
- “Fermi Observations of High-Energy Gamma-Ray Emission from GRB 080916C”, Abdo, A.A. & the Fermi Collaboration, *Science*, 1169101, (2009)
- “Milagro Observations of Multi-TeV Emission from Galactic Sources in the Fermi Bright Source List”, Abdo, A.A. & Milagro Collaboration, *Astrophysical Journal Letters*, 700, L127, (2009)
- “Fermi Observations of High-Energy Gamma-Ray Emission from GRB 080916C”, Abdo, A.A. & the Fermi Collaboration, *Science*, 1169101, (2009)
- “A gamma-ray burst with a high-energy spectral component inconsistent with the synchrotron shock model”, González, M. M.; Dingus, B. L.; Kaneko, Y.; Preece, R. D.; Dermer, C. D.; Briggs, M. S., *Nature*, 424, 749-751, (2003)
- “The Third EGRET Catalog of High-Energy Gamma-Ray Sources”, Hartman, R .C. & the EGRET Team, *Astrophysical Journal Supplements* 123, 79-202, (1999)
- “Detection of a  $\gamma$ -ray burst of very long duration and very high energy”, Hurley K., Dingus, B.L. et al., *Nature*, 372, 652, (1994)

## SELECT INVITED TALKS

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- “Ground-Based Observations of the Highest Energy Photons from the Non-Thermal Universe”, Invited Review at the European Week of Astronomy and Space Science, Athen, Greece 2016
- “Observing the Non-Thermal Universe with the Highest Energy Gamma Rays” 50 minute Plenary Talk at the American Astronomical Society Meeting, Kissimmee, FL 2016
- “Direct and Indirect Detection of Cosmic Rays”, American Physical Society Meeting, 2015, Baltimore, MD
- “HAWC & Fermi”, Fermi Science Symposium, Monterrey CA, 2012
- “The Highest Energy Emission from Gamma-Ray Bursts”, Kallen Symposium, Sweden, 2010
- “Surveying the TeV Sky”, TeV Particle Astrophysics Symposium, Stanford Linear Accelerator, 2009
- “Gamma Ray Astrophysics with Milagro and Fermi”, Nuclear Physics Gordon Conference, 2009
- “Multiwavelength Astronomy”, Neutrino 2008, Christchurch, New Zealand, 2008
- “Surveying the TeV Sky with Milagro” at TeV Particle Astrophysics Symp., Fermilab, July 2005
- “The GeV Sky: EGRET observations and GLAST expectations” at Moriond High Energy Astrophysics Symposium, La Thuile, Italy March 2005
- “The Highest Energy Gamma-Rays from Gamma-Ray Bursts”, 10th Marcel Grossman Meeting on General Relativity in Rio de Janeiro, Brazil July 2003
- “The Highest Energy Gamma-Rays from Gamma-Ray Bursts”, American Physical Society Meeting, Longbeach, CA, April 2000
- “The MeV and GeV Sky: Highlights from the Compton Gamma-Ray Observatory”, Plenary Session of “Particle and Nuclear Astrophysics and Cosmology in the Next Millennium”, Snowmass, CO, July 1994
- “The Violent Gamma-Ray Universe”, Cosmos Club, Washington, D.C., December 1993
- “Burst of News” on Astronomy Update, a NASA TV program, April 1993