

RESUME

Katherine Freese

George E. Uhlenbeck Professor of Physics

Associate Director, Michigan Center for Theoretical Physics

Department of Physics

University of Michigan

Ann Arbor, MI 48109

(734) 604 1325 (cell)

ktfreese@umich.edu

Citizenship: USA

Education

Sept. 1973 - June 1974: Massachusetts Institute of Technology

Sept. 1974 - June 1977: Princeton University, B.A. in Physics '77

Sept. 1979 - Jan. 1982: Columbia University, M.A. in Physics '81

Feb. 1982 - Aug. 1984: University of Chicago, Ph.D. in Physics '84

Thesis Advisor: Dr. David N. Schramm

Positions

1984-85 Postdoctoral fellow at Harvard Center for Astrophysics

1985-87 Postdoctoral fellow at Institute for Theoretical Physics, Santa Barbara, California

1987-88 Presidential Fellow at UC Berkeley

1988-91 Assistant Professor of Physics, Massachusetts Institute of Technology

1991-1999 Associate Professor of Physics (with tenure), University of Michigan

current Professor of Physics, University of Michigan

Awards, Honors, and National Service

1983-84: William Rainey Harper Fellowship of the University of Chicago

1986: President's Fellowship of the University of California

1989-1991: Sloan Foundation Fellowship in the amount of \$25,000

1990-1995: NSF Presidential Young Investigator Award in the amount of \$25,000 base funds per year

1993-2003: General Member of the Board, Aspen Center for Physics

1990: Selection committee for NSF Faculty Awards for Women

1995: Invited participant, 1st Annual Symposium on German-American Frontiers of Science (expenses paid by Humboldt Foundation and U.S. National Academy of Sciences)

1996-1998: Served on NRC panel to select NRC Postdoctoral Fellows

1998: Invited participant, Tenth Annual Frontiers of Science Symposium, sponsored by the National Academy of Sciences (expenses paid by NAS)

2000: Serve on NASA panel to select Astrophysics Theory Grants

2000: Member of Colloquium Committee, Aspen Center for Physics

2000-2005: Member of the Board of the Institute for Theoretical Physics in Santa Barbara, CA

2001: Member of the Steering Committee of the Institute for Theoretical Physics in Santa Barbara
2003: External Review Committee, Purdue University.
2005: External Review Committee, Physics Dept. Temple University
2006-2007: Member, Dark Matter Scientific Advisory Group (DMSAG) reporting to DOE and NSF
2006: Reviewer, Deep Underground Science and Engineering Laboratory (DUSEL)
2006: NSF Panel to evaluate Theory Proposals.
2006-2007: Visiting Miller Professor, UC Berkeley
2007: Visiting Professor, Perimeter Institute for Theoretical Physics
2005 - 2008: Member, Astronomy and Astrophysics Advisory Committee (AAAC) mandated by Congress
2008-2113: American Physical Society General Councillor
2009- : Fellow, American Physical Society
2009- : named George E. Uhlenbeck Professor of Physics at the Univ. of Michigan

Professional Affiliations

Member, International Advisory Board, Oskar Klein Center for Cosmo Particle Physics, Stockholm, Sweden, 2009-
Member of the Board, Institute for Theoretical Physics (KITP) at the University of California, Santa Barbara, 2001-2004
General Member of the Board, Aspen Center for Physics, 1990-2000
American Physical Society, Councillor (2008-2111)
American Astronomical Society
American Association for the Advancement of Science
American Geophysical Union
American Women in Science
American Association of University Women
American Association of University Professors

Other Activities

1974 National Institutes of Health, research in molecular biology with Dr. M. Nirenberg
1978 Stanford University, research assistant for Crystal Ball Experiment
1978 SLAC, research assistant in experimental high-energy physics
1980 CESR (Cornell), research assistant for Columbia-Stony Brook experiment (CUSB)
1981 Bell Labs (Murray Hill, NJ), research assistant studying crystal surface properties
1981-82 Fermi National Accelerator Laboratory, experimental high-energy research looking for neutrino oscillations
Summer 1991 visitor, Max Planck Institut fur Physik, Munich, Germany
Winter 1992 visitor, Institute for Theoretical Physics, University of California, Santa Barbara, CA
Spring 1995 visitor, Institute for Theoretical Physics, University of California, Santa Barbara, CA

May-June 1996 visitor, Fermilab Theoretical Astrophysics Group
 July-December 1997, Senior Program Officer, Board of Atmospheric Sciences and Climate, National Research Council, National Academy of Sciences, Washington, D.C.
 July-August 1998, visitor, Max Planck Institut fur Physik und Astrophysik, Munich, Germany
 April-May 1999, visitor, CERN, Geneva, Switzerland
 May-December 1999, August 2000, and July-August 2001, visitor, Max Planck Institut fuer Physik und Astrophysik, Munich, Germany
 April-May 2001, visitor, University of Pennsylvania Physics Dept.
 July-August 2001, visitor, Max Planck Institut fuer Physik und Astrophysik, Munich, Germany
 Winter 2002, Visiting Professor, ISCAP (Institute for Strings, Cosmology, and Astroparticle Physics), Columbia Univ., NY.
 Fall 2002, Organizer of six month workshop on “The New Cosmology Confronts Observation”, KITP (Kavli Institute for Theoretical Physics), Santa Barbara, CA
 October 2006, visitor, Galileo Galilei Institute, Florence, IT
 Sept 2006-July 2007, Visiting Miller Professor, UC Berkeley, CA
 2007-2008, Visiting Professor at Perimeter Institute for Theoretical Physics, Waterloo, Canada
 May 2009, Distinguished Visitor, University of Texas, Austin, TX
 January-June 2010, Visiting Professor, University of Texas, Austin, TX

Grants Awarded

1. NSF grant for the study of “Cosmological Non-Baryonic Matter” for the time period 8/1/88-1/1/90. Coinvestigators: David N. Spergel, Graciella B. Gelmini
2. Sept. 1989 - Sept. 1991: Sloan Foundation Fellowship
3. July 1990 - July 1995: Presidential Young Investigator Award
4. NSF grant for the study of “Theoretical Studies of Topics in Phase Transitions in the Early Universe” for the time period 9/1/91 - 4/1/94.
5. Grant from the International Division of NSF for the study of “US/Japan Cooperative Research: Physical Processes in Galaxy and Large-Scale Structure Formation” for the time period 1992 -1994. Coinvestigators: Jerry Ostriker, Ed Turner and several U.S. scientists.
6. NSF grant for the study of “Theoretical Studies of the Early Universe” for the time period 8/15/94 - 8/15/97
7. DOE grant for the study of “CosmoParticle Physics” for the time period 9/1/96 - 9/1/98.
8. NASA grant for the conference ”2001: A Spacetime Odyssey” in May 2001
9. In 1997 I joined the Particle Theory Group portion of the DOE grant at the University of Michigan, and currently share the funds for this grant.

Journal Publications

1. Massive, Degenerate Neutrinos and Cosmology, Katherine Freese, Edward W. Kolb, and Michael S. Turner, *Physical Review* **D27**, p. 1689 (1983)
2. Is the Local Monopole Flux Enhanced?, Katherine Freese and Michael S. Turner, *Physics Letters* **123B**, p. 293 (1983)
3. Monopole Catalysis of Nucleon Decay in Old Pulsars, Katherine Freese, Michael S. Turner, and David N. Schramm, *Physical Review Letters* **51**, p. 1625 (1983)
4. Galaxy Formation with Primordial Planetary Mass Black Holes, Katherine Freese, Richard Price, and David N. Schramm, *Astrophysical Journal* **275**, p. 405 (1983)
5. General Cosmological Constraints on the Masses of Stable Neutrinos and other ‘Inos’, Katherine Freese and David N. Schramm, *Nuclear Physics* **B233**, p. 167 (1984)
6. Lower and Upper Bounds on the Radius of Composite Quarks and Leptons, Itzhak Bars, Mark J. Bowick, and Katherine Freese, *Physics Letters* **138B**, p. 159 (1984)
7. Do Monopoles Keep White Dwarfs Hot?, Katherine Freese, *Astrophysical Journal* **286**, p. 216 (1984)
8. Covariant Functional Schrödinger Formalism and Application to the Hawking Effect, Katherine Freese, Christopher Hill, and Mark Mueller, *Nuclear Physics* **B225**, p. 693 (1985)
9. Cold Dark Matter Candidates and the Solar Neutrino Problem, Lawrence Krauss, Katherine Freese, David Spergel, and William Press, *Astrophysical Journal* **299**, p. 1001 (1985)
10. Can Scalar Neutrinos or Massive Dirac Neutrinos be the Missing Mass? Katherine Freese, *Physics Letters* **B167**, p. 295 (1986)
11. Detecting Cold Dark Matter Candidates, Andrzej Drukier, Katherine Freese, and David Spergel, *Physical Review* **D33**, p. 3495 (1986)
12. Thermoelectric Effects in Neutron Star Crusts and the msec Pulsar, John Blondin and Katherine Freese, *Nature* **323**, p. 786 (1986)
13. Cosmology with Decaying Vacuum Energy, Katherine Freese, Fred Adams, Joshua Frieman, and Emil Mottola, *Nuclear Physics B* **287**, p. 797 (1987)
14. Neutrino Mixing, Decays and Supernova 1987A, Joshua Frieman, Howard Haber, and Katherine Freese, *Physics Letters* **B200**, p. 115 (1988)
15. Signal Modulation in Cold Dark Matter Detection, Katherine Freese, Joshua Frieman, and Andrew Gould, *Physical Review* **D37**, p. 3388 (1988)
16. Superheavy Magnetic Monopoles and Main-Sequence Stars, Joshua Frieman, Katherine Freese, and Michael S. Turner, *Astrophysical Journal*, **335**, p. 844 (1988)
17. Cosmic Ray Constraints on the Annihilations of Relic Particles in the Galactic Halo, J. Ellis, R.A. Flores, K. Freese, S. Ritz, D. Seckel, and J. Silk, *Physics Letters* **B214**, p. 403 (1988)
18. Probing the Earth with Weakly Interacting Massive Particles, Andrew Gould, Joshua Frieman, and Katherine Freese, *Physical Review* **D39**, p. 1029 (1989)
19. Spectral Distortions of the Cosmic Microwave Background, Fred Adams, Katherine Freese, Janna Levin, and Jonathan McDowell, *Astrophysical Journal* **344**, p.24 (1989)

20. Bolometric Detection of Cold Dark Matter Candidates, Andrzej Drukier, Katherine Freese, and Joshua Frieman, unpublished work
21. Halo Gamma Rays from Cold Dark Matter Annihilation, Katherine Freese and Joseph Silk, *Physical Review* **D40**, p. 3828 (1989)
22. Evolution of Nonspherical Bubbles, Fred C. Adams, Katherine Freese, and Lawrence Widrow, *Physical Review* **D41**, p. 347 (1990)
23. Evolution of Hadron Bubbles: Voyage into the Quark Sea, Katherine Freese and Fred C. Adams, *Physical Review* **D41**, p. 2449 (1990)
24. Natural Inflation with Pseudo-Nambu-Goldstone Bosons, Katherine Freese, Joshua Frieman, and Angela Olinto, *Physical Review Letters* **65**, p. 3233 (1990)
25. Constraints on the Scalar Field Potential in Inflationary Models, Fred Adams, Katherine Freese, and Alan Guth, *Physical Review* **D43**, p. 965 (1991)
26. Double Field Inflation, Fred Adams and Katherine Freese, *Physical Review* **D43**, p. 353 (1991)
27. COBE Limits on Explosive Structure Formation Scenarios, Janna Levin, Katherine Freese, and David Spergel, *Astrophysical Journal* **389**, p. 464 (1992)
28. Instability and Subsequent Evolution of Electroweak Bubbles, Marc Kamionkowski and Katherine Freese, *Physical Review Letters* **69**, p. 2743 (1992)
29. Natural Inflation: Particle Physics Models, Power Law Spectra for Large-Scale Structure, and Constraints from COBE, F. Adams, J. R. Bond, K. Freese, J. Frieman, and A. Olinto, *Physical Review D* **47**, p. 426 (1993)
30. The MAD Era: A Possible New Resolution to the Horizon and Monopole Problems, Katherine Freese and Janna Levin, unpublished
31. Possible Solution to the Horizon Problem: Modified Aging in Massless Scalar Theories of Gravity, Janna Levin and Katherine Freese, *Physical Review D* **47**, p. 4282 (1993)
32. Baryon Number Diffusion and Instabilities in the Quark/Hadron Phase Transition, Fred Adams, Katherine Freese, and James Langer, *Physical Review D* **47**, p.4303 (1993)
33. Extension of the Parker Bound on the Flux of Magnetic Monopoles, Fred Adams, Marco Fatuzzo, Katherine Freese, Greg Tarlé, Rick Watkins, and Michael Turner, *Physical Review Letters* **70**, p.2511 (1993); results quoted in Particle Data Book
34. Curvature and Flatness in a Brans-Dicke Universe, Janna Levin and Katherine Freese, *Nuclear Physics B* **421**, p. 635 (1994)
35. Coupling of Pseudo Nambu Goldstone Bosons to Other Scalars and its Role in Double Field Inflation, Katherine Freese, *Physical Review D* **50**, p. 7731 (1994)
36. Calculation of Particle Production by Nambu Goldstone Bosons with Application to Inflation Reheating and Baryogenesis, Alexandre Dolgov and Katherine Freese, *Physical Review D* **51**, p.2693 (1995).
37. The Scalar Field Potential in Inflationary Models: Reconstruction and Further Constraints, Fred Adams and Katherine Freese, *Physical Review D* **51**, p. 6722 (1995).
38. Neutrino Mixing, Decays, and Supernova 1987A, Joshua Frieman, Howard Haber, and Katherine Freese, in the book “Solar Neutrinos: The First Thirty Years,” edited by J.N. Bahcall, R. Davis, Jr., P. Parker, A. Smirnov, and R. Ulrich (Reading, MA:

- Addison-Wesley Publishing Co.) (1995).
39. Analysis of a Space Telescope Search for Red Dwarfs: Limits on Baryonic Matter in the Galactic Halo, David Graff and Katherine Freese, *Astrophysical Journal Letters* **456**, p. L49 (1996).
 40. Moduli Inflation with Large Scale Structure Produced by Topological Defects, Katherine Freese, Tony Gherghetta, and Hideyuki Umeda, *Physical Review D* **54**, p. 6083 (1996).
 41. Identification and Visualization of the Formation Process of Ozone “Mini-Holes” Using Wavelet Analysis, Beth Weinberg, S. Roland Drayson, and Katherine Freese, *Geophysical Research Letters* **23**, p. 2223 (1996).
 42. The Mass Function of Low Mass Halo Stars: Limits on Baryonic Halo Dark Matter, by David Graff and Katherine Freese, *Astrophysical Journal Letters* **467**, p. L65 (1996).
 43. Indirect Detection of a Light Higgsino Motivated by Collider Data, by Katherine Freese and Marc Kamionkowski, *Physical Review* **55**, p. 1771 (1997).
 44. Baryogenesis during Reheating in Inflation and Comments on Spontaneous Baryogenesis, by Alexandre Dolgov, Katherine Freese, Raghu Rangarajan, and Mark Srednicki, *Physical Review* **D56**, p. 6155 (1997).
 45. Constraints on Intergalactic Transport of Cosmic Rays, by F.C. Adams, K. Freese, G. Laughlin, G. Tarle, and N. Schwadron, *Astrophysical Journal* **491**, p. 6 (1997).
 46. MACHOs, White Dwarfs, and the Age of the Universe, by David Graff, Greg Laughlin, and Katherine Freese, *Astrophysical Journal* **499**, p.7 (1998).
 47. Machos Viewed from a Cosmological Perspective: Contribution to the Baryonic Mass Density of the Universe, by B. Fields, K. Freese, and D. Graff, *New Astronomy* **3**, p. 357 (1998).
 48. A Bound on the Flux of Magnetic Monopoles from Catalysis of Nucleon Decay in White Dwarfs, Katherine Freese and Eleonora Krasteva, *Physical Review D* **59**, p. 3004 (1999); results quoted in Particle Data Book (2000).
 49. Constraining the Cosmic Abundance of Stellar Remnants with Multi-TeV Gamma-Rays, David Graff, Katherine Freese, Terry Walker, and Mark Pinsonneault, *Astrophysical Journal Letters* **523**, p. L77 (2000).
 50. Chemical Abundance Constraints on White Dwarfs as candidate Massive Compact Halo Objects, Brian Fields, Katherine Freese, and David Graff, *Astrophysical Journal* **534** p. 265 (2000).
 51. Cosmological Challenges in Theories with Extra Dimensions and Remarks on the Horizon Problem, Dan Chung and Katherine Freese, *Physical Review D* **61**, p. 2351 (2000).
 52. Can Geodesics in Extra Dimensions solve the Cosmological Horizon Problem? Dan Chung and Katherine Freese, *Phys. Rev. D* **62**, p. 063513 (2000).
 53. Protogalactic Extension of the Parker Bound, Matthew Lewis, Katherine Freese, and Greg Tarle, *Phys. Rev. D.* **62**, p. 025002 (2000).
 54. CP Violating Effects in Neutralino Scattering and Annihilation, Paolo Gondolo and Katherine Freese, in press, JHEP

55. Death of Baryonic Dark Matter, Katherine Freese, *Physics Reports* **333**, p. 183 (2000).
56. Hagedorn Inflation of D-Branes, Steven Abel, Katherine Freese, and Ian Kogan, *JHEP* **0101**, p. 39 (2001).
57. Direct Detection of Extragalactic WIMPs, Katherine Freese, Paolo Gondolo, and Leo Stodolsky, *Phys.Rev. D* **64** p. 123502 (2001)
58. The Cosmic Ray Positron Excess and Neutralino Dark Matter, Ted Baltz, Joakim Edsjo, Katherine Freese, and Paolo Gondolo, *Phys. Rev. D* **65** p. 063511, (2002).
59. Cardassian Expansion: a Model in which the Universe is Flat, Matter Dominated, and Accelerating, Katherine Freese and Matthew Lewis, *Phys.Lett.* **B540** p.1 (2002).
60. Lensed Density Perturbations in Braneworlds, Daniel Chung and Katherine Freese, *Phys.Rev.* **D67**, p. 103505 (2003)
61. A Wavelet Analysis of Solar Climate Forcing: I) Solar Cycle Timescales, Matthew Lewis and Katherine Freese, submitted for publication, Journal for Geophysical Research (2002).
62. The Ultimate Fate of Life in an Accelerating Universe, Katherine Freese and William Kinney, *Phys.Lett.* **B558** p.1 (2003).
63. Hagedorn Inflation: Open Strings on Branes Can Drive Inflation, Steven Abel, Katherine Freese, and Ian Kogan, *Phys.Lett.* **B561** p. 1 (2003).
64. Fluid Interpretation of Cardassian Expansion, Paolo Gondolo and Katherine Freese, *Phys.Rev.* **D68** p. 063509 (2003).
65. Observational Tests of Open Strings in Braneworld Scenarios, Katherine Freese, Matthew Lewis, and Jan Pieter van der Schaar, *JHEP* **0307** p.26 (2003).
66. An Accelerating Universe from Dark Matter Interactions with Negative Pressure, Paolo Gondolo and Katherine Freese, hep-ph/0211397
67. Future Type Ia Supernova Data as Tests of Dark Energy from Modified Friedmann Equations, Yun Wang, Katherine Freese, Paolo Gondolo, and Matthew Lewis, *Astrophys.J.* **594** p. 25 (2003).
68. What Can WMAP Tell Us About The Very Early Universe? New Physics as an Explanation of Suppressed Large Scale Power and Running Spectral Index, M. Bastero-Gil, K. Freese, L. Mersini-Houghton, *Phys. Rev.* **D68** p. 123514 (2003).
69. The Phase of the Annual Modulation as a Tool for Determining the WIMP Mass, M. J. Lewis and K. Freese, astro-ph/0307190, *Phys.Rev. D*70 (2004) 043501.
70. Detectability of Weakly Interacting Massive Particles in the Sagittarius Dwarf Tidal Stream, K. Freese, P. Gondolo, and H. J. Newberg, astro-ph/0309279, *Phys. Rev. D*71 (2005) 043516.
71. The Effects of the Sagittarius Dwarf Tidal Stream on Dark Matter Detectors, K. Freese, P. Gondolo, H. Newberg, and M. Lewis, *Phys.Rev.Lett.* **92**, p. 111301 (2004).
72. Probing the Evolution of the Dark Energy Density with Future Supernova Surveys, Y. Wang, V. Kostov, K. Freese, J. A. Frieman, and P. Gondolo, JCAP 0412 (2004) 003

73. Age of the Universe in the Cardassian Model, C.Savage, N. Sugiyama, K. Freese, astro-ph/0403196, JCAP 0510:007,2005.
74. Probing Dark Energy Using Its Density Instead of Its Equation of State Authors, Y. Wang, K. Freese, astro-ph/0402208, Phys.Lett. B632 (2006) 449-452
75. A Black Hole Solution to the Cosmological Monopole Problem, D. Stojkovic and K. Freese, Physics Letters B606 (2005) 251.
76. On: Natural Inflation, K. Freese and W. Kinney, Phys.Rev. D70 (2004) 083512
77. The Phantom Bounce: A New Oscillating Cosmology, M. Brown, K. Freese, and W. Kinney, astro-ph/0405353, JCAP03(2008)002.
78. Can WIMP Spin Dependent Couplings explain DAMA data, in light of Null Results from Other Experiments? C. Savage, P. Gondolo, and K. Freese, Phys.Rev. D70 (2004) 123513
79. Radiative Corrections to the Inflaton Potential as an Explanation of Suppressed Large Scale Power in Density Perturbations and the Cosmic Microwave Background, A. Buchel, F. Chishtie, V. Elias, K. Freese, R. Mann, D. McKeon, and T. Steele, hep-ph/0410117, JCAP 0503 (2005) 003.
80. Cardassian Expansion: Dark Energy Density from Modified Friedmann Equations, by K. Freese, astro-ph/0501675, New Astronomy Reviews 49 (2005) 103.
81. Chain Inflation in the Landscape: "Bubble Bubble Toil and Trouble" by K. Freese and D. Spolyar, hep-ph/0412145, JCAP 0507 (2005) 007.
82. Inflating with the QCD Axion, by K. Freese, J. T. Liu, and D. Spolyar, hep-ph/0502177, Phys.Rev. D72 (2005) 123521.
83. Holes in the walls: primordial black holes as a solution to the cosmological monopole problem, hep-ph/0505026, Phys.Rev. D72 (2005) 045012.
84. Devaluation: a dynamical mechanism for a naturally small cosmological constant, by K. Freese, J. T. Liu, and D. Spolyar, hep-ph/0510065, Physics Letters B634 (2006) 119.
85. New Models for a Triaxial Milky Way Spheroid and Effect on the Microlensing Optical Depth to the Large Magellanic Cloud, by C. Savage, H. J. Newberg, K. Freese, and P. Gondolo, astro-ph/0511046, JCAP 0607:003,2006.
86. A Black Hole Conjecture and Rare Decays in Theories with Low Scale Gravity. C. Bambi, A.D. Dolgov, K. Freese, hep-ph/0606321, Nucl.Phys.B763:91-114 (2007) 91
87. Annual Modulation of Dark Matter in the Presence of Streams. Chris Savage, Katherine Freese, Paolo Gondolo, astro-ph/0607121, Phys.Rev.D74:043531,2006.
88. Natural Inflation: Status after WMAP 3-year data, Christopher Savage, Katherine Freese, and William H. Kinney, hep-ph/0609144, Phys.Rev.D74:123511,2006.
89. Baryogenesis from Gravitational Decay of TeV-Particles in Theories with Low Scale Gravity, C. Bambi, A.D. Dolgov, K. Freese, hep-ph/0612018, JCAP 0704:005,2007.
90. Chain Inflation via Rapid Tunneling in the Landscape. Katherine Freese, James T. Liu, and Douglas Spolyar, hep-th/0612056
91. Dark matter and the first stars: a new phase of stellar evolution, Douglas Spolyar, Katherine Freese, and Paolo Gondolo, arXiv:0705.0521 [astro-ph], Phys.Rev.Lett: 100:051101,2008.
92. Dark Matter Capture in the first star: a Power source and a limit on Stellar Mass.

- Katherine Freese, Douglas Spolyar, Anthony Aguirre, arXiv:0802.1724 [astro-ph], JCAP 0811:014,2008.
93. Dangerous implications of a minimum length in quantum gravity, Cosimo Bambi and Katherine Freese, *Class.Quant.Grav.*25:195013,2008.
 94. "Dark Matter in the MSSM Golden Region," J. Kasahara, K. Freese and P. Gondolo, *Phys.Rev.D*79:045020,2009. arXiv:0805.0999 [hep-ph].
 95. "Dark Matter Densities during the Formation of the First Stars and in Dark Stars," K. Freese, P. Gondolo, J. A. Sellwood and D. Spolyar, *Astrophys.J.* 693:1563-1569, 2009. arXiv:0805.3540 [astro-ph].
 96. "Stellar Structure of Dark Stars: a first phase of Stellar Evolution due to Dark Matter Annihilation," K. Freese, P. Bodenheimer, D. Spolyar and P. Gondolo, arXiv:0806.0617 [astro-ph], *Astrophysical Journal Letters* 685, 101 (2008).
 97. "Compatibility of DAMA/LIBRA dark matter detection with other searches," C. Savage, G. Gelmini, P. Gondolo, K. Freese, JCAP 0904:010,2009. e-Print: arXiv:0808.3607 [astro-ph]
 98. "Slow nucleation rates in Chain Inflation with QCD Axions or Monodromy," A. Ashoorioon, K. Freese, J. T. Liu, e-Print: arXiv:0810.0228 [hep-ph], *Phys.Rev.D* 79:067302, 2009.
 99. "Gravity Waves from Chain Inflation," A. Ashoorioon, K. Freese, e-Print: arXiv:0811.2401 [hep-th]
 100. "Implications of primordial black holes on the first stars and the origin of the super-massive black holes," C. Bambi , D. Spolyar, A. D. Dolgov, K. Freese, M. Volonteri, *Mon.Not.Roy.Astron.Soc.*399:1347-1356,2009. e-Print: arXiv:0812.0585 [astro-ph]
 101. "Apparent shape of super-spinning black holes," C. Bambi, K. Freese. e-Print: arXiv:0812.1328 [astro-ph], *Phys.Rev.D*79:043002,2009.
 102. "Dark Stars: A New Look at the First Stars in the Universe" D.Spolyar, P. Bodenheimer, K.Freese, and P. Gondolo, *Astrophys.J.*705:1031-1042,2009. e-Print: arXiv:0903.3070 [astro-ph.CO]
 103. "Reply to 'A note on the innocuous implications of a minimum length in quantum gravity' by P.H. Frampton," C. Bambi and K. Freese, arXiv:0902.2647 [hep-th].
 104. "Compatibility of DAMA/LIBRA dark matter detection with other searches in light of new Galactic rotation velocity measurements," C. Savage, K. Freese, P. Gondolo and D. Spolyar, arXiv:0901.2713 [astro-ph]. JCAP 0909:036,2009.
 105. "Constraints on dark matter particles charged under a hidden gauge group from primordial black holes." De-Chang Dai, (SUNY, Buffalo) , Katherine Freese, (Michigan U., MCTP) , Dejan Stojkovic, (SUNY, Buffalo), JCAP 0906:023,2009. e-Print: arXiv:0904.3331 [hep-ph]
 106. "Accretion process onto super-spinning objects." Cosimo Bambi, (Tokyo U., IPMU) , Katherine Freese, (Michigan U., MCTP) , Tomohiro Harada, (Rikkyo U., RC-MAS) , Rohta Takahashi, (Wako, RIKEN) , Naoki Yoshida, (Tokyo U., IPMU) . *Phys.Rev.D*80:104023,2009. e-Print: arXiv:0910.1634 [gr-qc]
 107. "High Energy Neutrinos As A Test of Leptophilic Dark Matter." Douglas Spolyar, Matthew R. Buckley, Katherine Freese, Dan Hooper, Hitoshi Murayama, e-Print: arXiv:0905.4764 [astro-ph.CO]

108. "High-Energy Neutrino Signatures of Dark Matter Decaying into Leptons." Matthew R. Buckley, Katherine Freese, Dan Hooper, Douglas Spolyar, Hitoshi Murayama, e-Print: arXiv:0907.2385 [astro-ph.HE], Phys.Rev.D81:016006,2010
109. "Are we seeing the beginnings of Inflation?" Cosmin Ilie, Tirthabir Biswas, Katherine Freese, e-Print: arXiv:0908.0991 [astro-ph.CO], Phys.Rev.D80:103521,2009
110. "Kaluza-Klein Dark Matter And Neutrinos From Annihilation In The Sun." Thomas Flacke, Arjun Menon, Dan Hooper, Katherine Freese, e-Print: arXiv:0908.0899 [hep-ph]
111. "Cascade Events at IceCube+DeepCore as a Definitive Constraint on the Dark Matter Interpretation of the PAMELA and Fermi Anomalies." Sourav K. Mandal, Matthew R. Buckley, Katherine Freese, Douglas Spolyar, Hitoshi Murayama, e-Print: arXiv:0911.5188 [hep-ph], Phys.Rev.D81:043508,2010
112. "The Sensitivity of the IceCube Neutrino Detector to Dark Matter Annihilating in Dwarf Galaxies." Pearl Sandick, Douglas Spolyar, Matthew R. Buckley, Katherine Freese, Dan Hooper, e-Print: arXiv:0912.0513 [astro-ph.CO], Phys.Rev.D81:083506,2010.
113. "Dark Stars: A New Study of the First Stars in the Universe." Katherine Freese, Douglas Spolyar, Peter Bodenheimer, Paolo Gondolo, New J.Phys.11:105014,2009. e-Print: arXiv:0903.0101 [astro-ph.CO]
114. Positrons in Cosmic Rays from Dark Matter Annihilations for Uplifted Higgs Regions in MSSM. Kenji Kadota, Katherine Freese, and Paolo Gondolo, Phys.Rev.D81:115006,2010, e-Print: arXiv:1003.4442 [hep-ph]
115. Supermassive Dark Stars: Detectable in JWST. Katherine Freese, Cosmin Ilie, Douglas Spolyar, Monica Valluri, Peter Bodenheimer, e-Print: arXiv:1002.2233 [astro-ph.CO], Astrophys.J.716:1397-1407, 2010.
116. XENON10/100 dark matter constraints in comparison with CoGeNT and DAMA: examining the Leff dependence. Christopher Savage, Graciela Gelmini, Paolo Gondolo, and Katherine Freese, e-Print: arXiv:1006.0972
117. Dark Stars and Boosted Dark Matter Annihilation Rates. Cosmin Ilie, Katherine Freese, and Douglas Spolyar, e-Print: arXiv:1008.0348
118. Black Holes in our Galactic Halo: Compatibility with FGST and PAMELA Data and Constraints on the First Stars. Pearl Sandick, Juerg Diemand, Katherine Freese, and Douglas Spolyar, JCAP 1101:018,2011. e-Print: arXiv:1008.3552 [astro-ph.CO]
119. Predictive Signatures of Supersymmetry: Measuring the Dark Matter Mass and Gluino Mass with Early LHC data. Daniel Feldman, Katherine Freese, Pran Nath, Brent D. Nelson, Gregory Peim. e-Print: arXiv:1102.2548 [hep-ph]

Results Quoted in Particle Data Book

See references 33 and 48 above.

Conference Proceedings

1. Neutrino Astrophysics, D.N. Schramm and K. Freese, J.R. Wilson Festschrift, University of Illinois, October 1982
2. Cosmological Constraints on Neutrinos and other 'Inos' and the Missing Light Problem, D.N. Schramm and K. Freese, Third Moriond Conference in Astrophysics, La

- Plagne, France, March 1983
3. Monopoles in pulsar PSR 1929+10, K. Freese, Monopole '83 Conference, University of Michigan, October 1983
 4. Covariant Schrödinger Formalism and Application to Accelerated Observers, K. Freese, Marcel Grossman Meeting in General Relativity, Rome, Italy, June 1985
 5. Fundamental Physics and Dark Matter, K. Freese, Santa Cruz Workshop on Galaxy Formation, Santa Cruz, California, July 1986
 6. Detecting “Missing Mass” Candidates with the Superheated Superconducting Detector, A.K. Drukier, K. Freese, and D.N. Spergel, Conference on Applied Superconductivity, Baltimore, Maryland, September 1986
 7. Cosmology with Decaying Vacuum Energy, K. Freese, J. Frieman, F. Adams, and E. Mottola, Meeting of the American Chemical Society, New Orleans, LA, Sept. 1987
 8. Halo Antiprotons and Gamma Rays from Cold Dark Matter Annihilation, J. Ellis, R.A. Flores, K. Freese, S. Ritz, D. Seckel, and J. Silk, Particle Astrophysics Workshop, Berkeley, CA, Dec. 1988
 9. Spectral Distortions of the Cosmic Microwave Background, F.C. Adams, K. Freese, J. Levin, and J.C. McDowell, Particle Astrophysics Workshop, Berkeley, CA, Dec. 1988
 10. Astrophysical Dark Matter: Candidates from Particle Physics and Detection Possibilities, Katherine Freese, Weak Interactions in Nuclei (WEIN) Conference, Montreal, Canada, May 1989
 11. Natural Inflation, Katherine Freese, Texas/ESO-CERN Symposium, Brighton, England, December 1990
 12. Indirect Detection of Dark Matter, Katherine Freese, Texas/ESO-CERN Symposium, Brighton, England, December 1990
 13. Unnatural and Natural Inflation, Katherine Freese, PASCOS Meeting, Northeastern University, March 1991
 14. The MAD Era: A Possible New Resolution to the Horizon Problem, Janna Levin and Katherine Freese, APS Meeting, Division of Particles and Fields, Fermilab, November 1992
 15. An Improved Parker Bound on the Flux of Magnetic Monopoles, Gregory Tarlé, Fred C. Adams, Marco Fatuzzo, Katherine Freese, Michael S. Turner and Richard Watkins, in *Proc. of the 23rd Int. Cosmic Ray Conf.*, (Calgary, 1993), **4**, 597 (1993).
 16. Natural Inflation, Katherine Freese, Yamada Conference XXXVII: Evolution of the Universe and its Observational Quest, Tokyo, Japan, June 1993
 17. The Horizon, Flatness, and Monopole Problems in Cosmology, Katherine Freese, Coral Gables Meeting, Miami, FLA, January 1994
 18. Theoretical Status of Inflation, Katherine Freese, Coral Gables Meeting, Miami, FL, January 1995
 19. Low Mass Stars and Baryonic Dark Matter, Katherine Freese, Meeting on ‘Aspects of Dark Matter in Astro- and Particle Physics’, Heidelberg, Germany, Sept. 1996
 20. New Higgsino Dark Matter Candidate Motivated by Collider Data, Katherine Freese, Meeting on ‘Aspects of Dark Matter in Astro- and Particle Physics’, Heidelberg, Germany, Sept. 1996

21. "Observational Status of the Texture Large-Scale Structure Formation Model", Hideyuki Umeda and Katherine Freese, Proceedings for IAU Regional Meeting, Pusan, Korea, Sept. 1996
22. "What are Machos? Limits on Stellar Objects as the Dark Matter of our Halo", K. Freese, B. Fields, and D. Graff, International Workshop on 'Aspects of Dark Matter in Astro- and Particle Physics', Heidelberg, Germany, July 1998
23. "Limits on Stellar Objects as the Dark Matter of Our Halo: Nonbaryonic Dark Matter Seems to be Required," K. Freese, Nineteenth Texas Symposium on Relativistic Astrophysics and Cosmology, Paris, France, December 1998
24. "Death of Stellar Baryonic Dark Matter," K. Freese, B. Fields, and D. Graff, First Stars Conference, Munich, Germany, August 1999, astro-ph/0002058.
25. "Effects of CP Violation in Neutralino Scattering and Annihilation," P. Gondolo and K. Freese, TAUP99 Meeting, Paris, France, September 1999, hep-ph/0001071.
26. "Death of Stellar Baryonic Dark Matter Candidates," K. Freese, B. Fields, and D. Graff, Meeting on Sources and Detection of Dark Matter in the Universe, Marina del Rey, CA, February 2000.
27. "Death of Baryonic Dark Matter," K. Freese, B. Fields, and D. Graff, Third International Workshop on the Identification of Dark Matter, York, England, Sept. 2000.
28. "Hagedorn Inflation," Meeting on Extra Dimensions, Paris, FR, May 2001
29. "Generalized Cardassian Expansion: A Model in which the Universe is Flat, Matter Dominated, and Accelerating," Meeting on Sources and Detection of Dark Matter and Dark Energy in the Universe, Marina del Rey, CA, February 2002.
30. "The positron excess and supersymmetric dark matter," Edward A. Baltz, Joakim Edsjo, Katherine Freese, and Paolo Gondolo, Proceedings of the 4th International Workshop on Identification of Dark Matter (idm2002), York, England, 2-6 September, 2002.
31. "Cardassian Expansion: Dark Energy from Modified Friedmann Equations", Proceedings of the 6th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe, February 18-20, 2004, Marina del Rey, California, *New Astronomy Reviews* 49 (2005) 103.
32. "The Dark Side of the Universe", conference proceeding for Low Temperature Detectors LTD-11 Workshop in Tokyo (2005), *Nuclear Inst. and Methods in Physics Research, A*, **559** (2006) 337.
33. "Dark Matter in the First Stars: A New Phase of Stellar Evolution", Proceedings for The First Stars Conference in Santa Fe, NM, July 2007
34. "Annual Modulation in the Presence of Streams", C. Savage, K. Freese, and P. Gondolo, Proceedings of the 7th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe, Proceedings of the 7th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe, Santa Monica, CA 2006, *Nuclear Physics B - Proceedings Supplements*, **173** (2007) 91.
35. "The Phantom Bounce: A New Proposal for an Oscillating Cosmology", Katherine Freese, Matthew G. Brown, William H. Kinney, conference proceedings for "The Origin of Time's Arrow" workshop at the NYAS, October 2007, arXiv:0802.2583

- [astro-ph]
36. “Natural Inflation: The Status after WMAP 3-year data”, Katherine Freese, Christopher Savage, William H. Kinney, to appear in the proceedings of International Workshop: From Quantum to Cosmos: Fundamental Physics Research in Space, Washington, District of Columbia, 22-24 May 2006. e-Print: arXiv:0802.0227 [hep-ph].
 37. ”Dark Stars: Dark Matter in the First Stars leads to a New Phase of Stellar Evolution,” K. Freese, D. Spolyar, A. Aguirre, P. Bodenheimer, P. Gondolo, J.A. Sellwood, Naoki Yoshida, e-Print: arXiv:0808.0472 [astro-ph], Conference Proceeding for IAU Symposium 255: Low-Metallicity Star Formation: From the First Stars to Dwarf Galaxies
 38. “Review of Observational Evidence for Dark Matter in the Universe and in upcoming searches for Dark Stars,” K. Freese, Conference Proceeding for ”Dark Matter and Dark Energy” in Lyon, France, July 2008, arXiv:0812.4005 [astro-ph].
 39. “Dark Stars: the First Stars in the Universe may be powered by Dark Matter Heating,” K. Freese, P. Bodenheimer, P. Gondolo and D. Spolyar, arXiv:0812.4844 [astro-ph], Eighth UCLA Symposium: Sources and Detection of Dark Matter and Dark Energy in the Universe, proceedings, Feb. 2008. AIP Conf.Proc.1166:33-38,2009.
 40. “Dark Stars: Död och Återuppståndelse,” D. Spolyar, K. Freese, P. Gondolo, A. Aguirre, P. Bodenheimer, J. A. Sellwood and N. Yoshida, arXiv:0901.4574 [astro-ph.CO], conference proceeding for ”Identification of Dark Matter” (IDM 2008), Sweden, August 2008.
 41. “Dark Stars: Begynnelsen,” P. Gondolo, K. Freese, D. Spolyar, A. Aguirre, P. Bodenheimer, J. A. Sellwood and N. Yoshida, arXiv:0901.4578 [astro-ph.CO], conference proceeding for ”Identification of Dark Matter” (IDM 2008), Sweden, August 2008.
 42. ”Is the Carter-Israel conjecture correct?” Cosimo Bambi, Katherine Freese, Rohta Takahashi, e-Print: arXiv:0908.3238 [astro-ph.HE]
 43. Supermassive Dark Stars: Detectable in JWST and HST. Katherine Freese, Eduardo Ruiz , Monica Valluri, Cosmin Ilie, Douglas Spolyar, and Peter Bodenheimer, talk presented at First Stars and Galaxies Conference at UT Austin in March 2010, AIP Conf.Proc.1294:45-51,2010. e-Print: arXiv:1006.5246 [astro-ph.CO]
 44. Signatures of Dark Star Remnants in the Galactic Halo. Pearl Sandick, Juerg Diemand, Katherine Freese, and Douglas Spolyar, e-Print: arXiv:1012.0068 [astro-ph.CO]

Invited Talks –

A. Invited Talks at Conferences and Workshops

- [1] Monopole ’83 Conference
University of Michigan, October 1983
“*Monopoles in pulsar PSR 1929+10*”
- [2] Marcel Grossman Meeting in General Relativity
University of Rome, June 1985
“*Covariant Schrodinger Formalism and Application to Accelerated Observers*”

- [3] Aspen Conference on Dark Matter
Aspen, August 1985
“Dark Matter: Constraints and Detection Possibilities”
- [4] Aspen Winter Physics Conference
Aspen, January 1986
“Detecting Cold Dark Matter”
- [5] Santa Cruz Workshop on Galaxy Formation
Santa Cruz, July 1986
“Fundamental Physics and Dark Matter”
- [6] Particle Astrophysics Workshop
Berkeley, CA, Dec. 1988
“Halo Antiprotons and Gamma Rays from Cold Dark Matter Annihilation”
- [7] Particle Astrophysics Workshop
Berkeley, CA, Dec. 1988
“Spectral Distortions of the Cosmic Microwave Background”
- [8] Weak Interactions in Nuclei (WEIN) Conference
Montreal, Canada, May 1989
“Astrophysical Dark Matter: Candidates from Particle Physics and Detection Possibilities”
- [9] ESO-CERN 4/Texas Relativistic Astrophysics Conference
Brighton, England, Dec. 1990
“Indirect Dark Matter Detection”
- [10] ESO-CERN 4/Texas Relativistic Astrophysics Conference
Brighton, England, Dec. 1990
“Natural Inflation”
- [11] Conference on Recent Advances in Physical Cosmology
Aspen, CO, January 1991
“Exotic Dark Matter”
- [12] PASCOS Meeting
Boston, MA, March 1991
“Natural Inflation”
- [13] Conference on Phase Transitions in Cosmology
Santa Barbara, CA, April 1992
“More on Natural Inflation”
- [14] Coral Gables Meeting on Unified Symmetries
Miami, Florida, January 1993
“The Horizon, Flatness, and Monopole Problems in Cosmology”
- [15] Yamada Conference XXXVII: Evolution of the Universe and its Observational Quest
Tokyo, Japan, June 1993
“Natural Inflation”
- [16] Coral Gables Meeting on Unified Symmetries
Miami, Florida, June 1994
“Natural Inflation”
- [17] Particle Astrophysics Meeting

- Snowmass, CO, July 1994
“Theoretical Status of Inflation”
- [18] AAPT Meeting
 Orlando, FL, January 1995
“Suggestions for Improving the Chances for Success for Women in Physics at the Collegiate to Faculty Level”
- [19] Inflationary Cosmology Meeting
 Aspen, CO, August 1995
“Inflationary Models”
- [20] Inflation Meeting
 Aspen, CO, August 1995
“On Baryogenesis and Inflation”
- [21] Aspects of Dark Matter in Astro and Particle Physics
 Heidelberg, Germany, September 1996
“Low Mass Stars and Baryonic Halo Dark Matter”
- [22] Aspects of Dark Matter in Astro and Particle Physics
 Heidelberg, Germany, September 1996
“A New Higgsino Dark Matter Candidate”
- [23] Eighteenth Texas Symposium on Relativistic Astrophysics and Cosmology
 Chicago, IL, December 1996
“Red Dwarfs, Brown Dwarfs, and White Dwarfs as the Baryonic Matter in the Halo of Our Galaxy”
- [24] Aspen Winter Meeting on Astrophysics
 Aspen, CO, January 1997
“Is the Baryonic Dark Matter in Our Galaxy made of Red Dwarfs, White Dwarfs, or Brown Dwarfs?”
- [25] The Third International Workshop on Gravitational Microlensing Surveys
 Notre Dame, IN, March 1997
“Red Dwarfs, Brown Dwarfs, and White Dwarfs as the Baryonic Matter in the Halo of our Galaxy”
- [26] Cosmo-97: The First International Workshop on Particle Physics and the Early Universe
 Ambleside, England, September 1997
“Limits on Baryonic Dark Matter in the Galactic Halo: Red Dwarfs, Brown Dwarfs, and White Dwarfs”
- [27] Coral Gables Meeting on Unified Symmetries
 Miami, FL, December 1997
“Machos viewed from a Cosmological Perspective”
- [28] Fourth International Workshop on Gravitational Microlensing Surveys
 Paris, France, January 1998
“Machos viewed from a Cosmological Perspective: Mass Budget and other Issues”
- [29] XXXIIIrd Rencontres de Moriond: Fundamental Parameters in Cosmology
 Les Arcs, France, January 1998
“What are Machos?”

- [30] International Workshop on Aspects of Dark Matter in Astro- and Particle Physics
Heidelberg, Germany, July 1998
“What are Machos? Limits on Stellar Objects as the Dark Matter of our Halo”
- [31] Nineteenth Texas Symposium on Relativistic Astrophysics and Cosmology
Paris, France, December 1998
“What are Machos?”
- [32] Aspen Winter Meeting on Astrophysics
Aspen, CO, January 1999
“What are Machos?”
- [33] MPA/ESO First Stars Conference
Munich, Germany, July 1999
“Status of Stellar Dark Matter: Nonbaryonic Dark Matter seems to be Required”
- [34] COSMO-99
Trieste, Italy, Sept. 1999
“Status of Baryonic Dark Matter”
- [35] German American Academic Council Meeting
Schloss Ringberg, Tegernsee, Germany, October 1999
“Death of Baryonic Dark Matter”
- [36] Sources and Detection of Dark Matter in the Universe
Marina del Rey, CA, Feb. 2000
“Death of Baryonic Dark Matter”
- [37] Third International Workshop on the Identification of Dark Matter
York, England, September 2000
“Death of Baryonic Dark Matter”
- [38] Workshop on Extra Dimensions and Cosmology
Paris, France, May 2001
“Two New Solutions to the Cosmological Horizon Problem”
- [39] M-Theory and Cosmology
Cambridge, England, August 2001
“Two New Solutions to the Cosmological Horizon Problem in the Context of Extra Dimensions”
- [40] Workshop on the Detection and Identification of Dark Matter
Marina del Rey, CA, Feb. 2002
The Cardassian Universe: A Model in which the Universe is Flat, Matter Dominated, and Accelerating
- [41] Workshop on Extra Dimensions, Michigan Center for Theoretical Physics
Ann Arbor, MI, April 2002
The Cardassian Universe: A Model in which the Universe is Flat, Matter Dominated, and Accelerating
- [42] The New Cosmology Confronts Observation: CMB, Dark Matter, Dark Energy, and Braneworlds
Santa Barbara, CA, August 2002
Hagedorn Inflation
- [43] String Cosmology Workshop

- Aspen, CO, Sept. 2002
Hagedorn Inflation
- [44] String Cosmology Workshop
 Aspen, CO, Sept. 2002
The Cardassian Universe: A Model in which the Universe is Flat, Matter Dominated, and Accelerating
- [45] Aspen Winter Meeting: Large Scale Structure of the Universe
 Aspen, CO, Jan. 2004
Effects of the Sagittarius stream on Dark Matter Detection
- [46] 6th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe
 Santa Monica, CA, Feb. 2004
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
- [47] The Dark Side Workshop
 Michigan Center for Theoretical Physics, May 2004
New Physics as an Explanation of Suppressed Large Scale Power in the Cosmic Microwave Background
- [48] Cosmic Acceleration: Dark Energy or New Gravitational Physics
 Aspen, CO, August 2004
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
- [49] COSMO-04, International Workshop on Particle Physics and the Early Universe
 Toronto, Canada, Sept. 2004
Effects of the Sagittarius Stream on Dark Matter Detection
- [50] Nonlinear Dynamics in Astronomy and Physics Conference
 Univ. of Florida, Nov. 2004
Cardassian Expansion as Explanation of Dark Energy in the Universe
- [51] String Cosmology Workshop
 Perimeter Institute, Waterloo, Canada, March 2005
Chain Inflation
- [52] Low Temperature Detectors-11 Conference
 Tokyo, Japan, August 2005
Dark Matter in the Universe
- [53] COSMO-05, International Workshop on Particle Physics and the Early Universe
 Bonn, Germany, Sept. 2005
Naturalness in Inflation in 2005
- [54] Crafoord Symposium
 Stockholm, Sweden, Sept. 2005
Dark Matter in the Universe
- [55] PI/APC Workshop on Cosmological Frontiers in Fundamental Physics
 Perimeter Institute, Waterloo, Canada, October 2005
 Member of Panel for Discussion of String Cosmology
- [56] New Views of the Universe: Kavli Institute Inaugural Symposium in Honor of David Schramm
 Chicago, IL, December 2005

- Dark Matter in the Universe*
- [57] 7th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe
Santa Monica, LA, Feb. 2006
Solving the Cosmological Constant Problem
- [58] SUSY 2006:14th International Conference on Supersymmetry and the Unification of Fundamental Interactions
Irvine, CA, June 2006
Natural Inflation after WMAP
- [59] COSMO 2006: International Workshop on Particle Physics and the Early Universe
Lake Tahoe, CA, September 2006
Natural Inflation after WMAP
- [60] Astroparticle and Cosmology Workshop
Galileo Galilei Institute, Florence, Italy, October 2006
Inflation after WMAP
- [61] Institute for Nuclear and Particle Astrophysics and Cosmology meeting
Berkeley, CA, May 2007
Dark Matter in the First Stars: a New Phase of Stellar Evolution
- [62] Origins of Dark Energy Conference
Origins Institute, Hamilton, Ontario, CA, May 2007
Devaluation: A Dynamical Solution to the Cosmological Constant Problem
- [63] The Dark Side of the Universe 2007
University of Minnesota, Minneapolis, MN, June 2007
Dark Matter in Stars: a New Phase of Stellar Evolution
- [64] Star Formation: Then and Now, Conference
Kavli Institute for Theoretical Physics, Santa Barbara, CA, Aug. 2007
Dark Matter in the First Stars: a New Phase of Stellar Evolution
- [65] The Origin of Time's Arrow
Conference sponsored by the New York Academy of Sciences, Oct. 2007
The Phantom Bounce: A New Proposal for an Oscillating Cosmology
- [66] Eighth UCLA Symposium: Sources and Detection of Dark Matter and Dark Energy in the Universe
Santa Monica, CA, Feb. 2008
Dark Stars: A New Phase of Stellar Evolution
- [67] International Astronomical Union Symposium 255: Low Metallicity Star Formation from the First Stars to Dwarf Galaxies
Rapallo, Italy, June 2008
Dark Stars: A New Phase of Stellar Evolution due to Dark Matter Heating in the First Stars
- [68] Dark Energy and Dark Matter Conference
Lyons, France, July 2008
Observational Evidence for Dark Matter: A Review
- [69] COSMO-08
Madison, WI, August 2008

- Dark Stars*
- [70] Aspen Winter Meeting on Dark Matter
Aspen, CO, January 2009
Dark Stars
- [71] Aspen Winter Meeting on Magnetars
Aspen, CO, February, 2009
Dark Stars
- [72] PPC2009: Third International Workshop on the Interconnection between particle physics and Cosmology
Oklahoma, May 2009
Dark Stars
- [73] TeV Particle Astrophysics 2009
Kavli/SLAC, July 2009
Dark Stars
- [74] Center for Particle Cosmology at the Univ. of Pennsylvania Inaugural Workshop
Philadelphia, PA, December 2009
Dark matter and Dark Stars
- [75] Ninth UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe.
Santa Monica, CA, February 24 - 26, 2010
Dark Matter Searches: A Review
- [76] The First Stars and Galaxies: Challenges for the Next Decade
Austin, Texas, March 8-11, 2010.
Supermassive Dark Stars
- [77] The First Stars and Galaxies: Challenges for the Next Decade
Austin, Texas, March 8-11, 2010.
Dark Matter Experiments: A Review

B. Colloquia

- [1] Physics/Astronomy Colloquium
UCLA, October 1984
“Phase Transitions in Cosmology”
- [2] Physics/Astronomy Colloquium
Rockefeller University, February 1985
“Cosmology and Particle Physics”
- [3] Institute for Theoretical Physics Colloquium
Santa Barbara, California, October 1985
“Detecting Cold Dark Matter Candidates”
- [4] Astronomy Colloquium
University of California, Santa Cruz, December 1985
“Constraints on and Detection of Cold Dark Matter”
- [5] Astronomy Colloquium
University of California, Berkeley, December 1985
“GeV Mass Dark Matter: Constraints and Detection Possibilities”
- [6] Physics Colloquium

- Rochester University, New York, December 1985
“Cold Dark Matter”
- [7] Astronomy/Physics Colloquium
 UC San Diego, December 1986
“Fundamental Physics and The Missing Mass”
- [8] Astrophysics Colloquium
 M.I.T., April 1989
“Fundamental Physics and Dark Matter”
- [9] Astrophysics Colloquium
 M.I.T., February 1990
“The Quark/Hadron Phase Transition: Seaweed in the Early Universe”
- [10] Astrophysics Colloquium
 Univ. of Massachusetts, Amherst, October 1990
“New Directions for the Inflationary Universe”
- [11] Physics Colloquium
 University of Michigan, October 1990
“New Ideas for the Inflationary Universe”
- [12] Physics Colloquium
 University of Wisconsin, Madison, November 1990
“New Directions for the Inflationary Universe”
- [13] Physics Colloquium
 Oakland University, April 1992
“New Ideas for the Inflationary Universe”
- [14] Astronomy Colloquium
 University of Hawaii, December 1992
“The Horizon, Flatness, and Monopole Problems in Cosmology”
- [15] Physics Colloquium
 McMaster University, Hamilton, Ontario, Canada, November 1993
“The Inflationary Universe After COBE”
- [16] Physics Colloquium
 Purdue University, Indiana, December 1994
“Inflationary Cosmology: from Theory to Observation and Back”
- [17] Physics Colloquium
 Boston University, Boston, MA, November 1995
“Inflationary Cosmology: from Theory to Observation and Back”
- [18] Physics/Astronomy Colloquium
 University of Miami, Miami, FL, November 1995
“Inflationary Cosmology”
- [19] Physics Colloquium
 Ludwig Maximilian’s Universitaet, Munich, Germany, December 1995
“Testing Inflationary Cosmology”
- [21] Physics Colloquium
 University of Michigan, November 1996
“Inflationary Cosmology: from Theory to Observation and Back”

- [21] Physics/Astronomy Colloquium Wayne State University, December 1996
"Inflationary Cosmology: from Theory to Observation and Back"
- [22] Physics Colloquium
 Michigan State University, January 1998
"The Dark Matter of the Universe"
- [23] Physics Colloquium
 Princeton University, February 1998
"Inflationary Cosmology: from Theory to Observation and Back"
- [24] Physics/Astronomy Colloquium
 University of Toledo, April 1998
"Inflationary Cosmology: from Theory to Observation and Back"
- [25] Physics/Astronomy Colloquium
 University of Miami, April 1998
"The Dark Matter of the Universe"
- [26] Institute Colloquium
 Max Planck Institut fur Physik, Munich, Germany, August 1998
"Status of Baryonic Dark Matter"
- [27] Physics Colloquium
 University of Massachusetts, Amherst, October 1998
"Inflationary Cosmology: from Theory to Observation and Back"
- [28] Physics/Astronomy Colloquium
 William and Mary, Williamsburg, VA, November 1998
"Testing Inflationary Cosmology"
- [29] Institute Colloquium
 Max Planck Institut fuer Physik, Muenchen, Germany, November 1999
"Death of Baryonic Dark Matter"
- [30] Astronomy Colloquium
 Ohio State University, Columbus, OH, March 2000
"What is the Dark Matter in the Halo of our Galaxy?"
- [31] Physics Colloquium, in Celebration of Marie Curie Month
 University of Michigan, Ann Arbor, MI, October 2000
"Dark Matter and Dark Energy in Cosmology"
- [32] Physics Colloquium
 University of New Hampshire, Durham, NH, October 2000
"Dark Matter and WIMPs"
- [33] Physics Colloquium
 University of Arizona, Tucson, AZ, January, 2001
"Cosmology at the Turn of the Millenium"
- [34] Physics/Astronomy Colloquium
 Oakland University, Detroit, MI, March 2001
"Cosmology at the Turn of the Millenium"
- [35] Physics Colloquium
 University of Wisconsin, Madison, WI, March 2001
"Dark Matter and Dark Energy in Cosmology"

- [36] Physics Colloquium, in honor of Sigma Xi Awardee Ceremony
Central Michigan University, Michigan, April 2003
“The Dark Side of the Universe”
- [37] Physics/Astronomy Colloquium, University of Buffalo
Buffalo, NY, April 2004
“The Dark Side of the Universe”
- [38] Physics Colloquium, Michigan State University
East Lansing, MI, November 2004
“The Dark Side of the Universe”
- [31] 100 Years Beyond Einstein Theme Semester Colloquium, Univ. of MI
Ann Arbor, MI, December 2005
“The Expanding Universe and Big Bang Cosmology”
- [32] Physics/Astronomy Colloquium
University of Utah, March 2006
“Inflationary Cosmology: from Theory to Observation and Back”
- [33] Physics Colloquium
University of California, Berkeley, March 2007
“Inflationary Cosmology: from Theory to Observation and Back”
- [34] Physics Colloquium
Temple University, January 2008
“Cosmology in this Millenium”
- [35] Institute for Theoretical Physics and Astronomy Colloquium
Heidelberg, Germany, July 2008
“Dark Stars: A New Phase of Stellar Evolution
- [36] Physics Colloquium
Columbia University, October 2008
“Dark Matter”
- [37] Physics Colloquium
University of Florida, Feb. 2009
”Dark Matter in the Universe”
- [38] Physics/Astronomy Colloquium
Yale University, March 2009
”Dark Matter”
- [39] Physics/Astronomy Colloquium
Southern Methodist University, May 2009
”Dark Matter”
- [40] Physics/Astronomy Colloquium
University of Maryland, October 2009
”Dark Matter in the Universe
- [41] Physics/Astronomy Colloquium
University of North Carolina, Chapel Hill, Feb. 2010
”Dark Matter in the Universe
- [42] Astronomy Colloquium
NOAO/University of Arizona, March 2010

"Dark Stars"

- [43] Physics/Astronomy Colloquium
Vanderbilt University, April 2010
"Dark Matter in the Universe"
- [44] Physics Colloquium, in honor of Faye Ajzenberg-Selove
University of Wisconsin, Madison, April 2010
"Dark Matter in the Universe"
- [45] Astronomy Colloquium
University of Texas, Austin, January 2011
"What is Dark Matter?"

C. Invited Talks: Research Seminars

- [1] Astrophysics Seminar
Fermi National Accelerator Laboratory, February 1983
"Cosmological Constraints on Neutrino Masses"
- [2] Enrico Fermi Institute Seminar
University of Chicago, May 1983
"Monopole-Catalyzed Nucleon Decay: Neutron Stars and White Dwarfs"
- [3] Theoretical Physics Seminar
Fermi National Accelerator Laboratory, December 1983
"Monopole-Catalyzed Nucleon Decay in Neutron Stars"
- [4] Theoretical Physics Seminar
Los Alamos National Laboratory, February 1984
"Do Monopoles Keep White Dwarfs Hot?"
- [5] High Energy Physics Seminar
University of Michigan, March 1984
"Monopoles in Neutron Stars and White Dwarfs"
- [6] High Energy Physics Seminar
UCLA, October 1984
"Monopoles and Astrophysics"
- [7] Theoretical Physics Seminar
Rockefeller University, January 1985
"Covariant Schrödinger Formalism and Application to the Hawking Effect"
- [8] Early Universe Seminar
Harvard Center for Astrophysics, March 1985
"Accelerated Observers and the Hawking Effect"
- [9] Theoretical Physics Seminar
MIT, March 1985
"Schrödinger Wave Functional Formalism and the Hawking Effect"
- [10] Early Universe Seminar
Harvard Center for Astrophysics, September 1985
"GeV Mass Dark Matter"
- [11] Physics Department Seminar
Santa Barbara, California, October 1985
"Schrödinger Picture and the Hawking Effect"

- [12] Solar Neutrino Conference
Santa Barbara, April 1987
“Neutrino Decays and Supernova 1987A”
- [13] High Energy Physics Seminar
ITP, Santa Barbara, June 1987
“Baryon Number Violation via Instanton and Sphaleron Configurations”
- [14] Early Universe Seminar
Harvard Center for Astrophysics, April 1989
“Astrophysical Signatures of Cold Dark Matter”
- [15] Early Universe Seminar
Harvard Center for Astrophysics, January 1990
“Hadron Bubble Evolution: Voyage into the Quark Sea”
- [16] Center for Theoretical Physics Seminar
M.I.T., February 1990
“Hadron Bubble Instability at the Quark/Hadron Transition”
- [17] Workshop on Inflation and Exotic Cosmic Structure Formation
University of British Columbia, Vancouver, May 1990
“Fine-Tuning in Inflationary Models”
- [18] High-Energy Physics Seminar
University of Pennsylvania, November 1990
“Topics in Inflation”
- [19] Theoretical Seminar
Fermilab, February 1991
“Natural Inflation”
- [20] Early Universe Seminar
Harvard/Smithsonian Center for Astrophysics, March 1991
“Natural and Unnatural Inflation”
- [21] Center for Particle Astrophysics Seminar
Berkeley, CA, March 1991
“Natural Inflation”
- [22] Center for Particle Astrophysics Seminar
Berkeley, CA, March 1991
“Having a Family in a Physics Career”
- [23] Theoretical Particle Physics Seminar
Princeton University, April 1991
“Unnatural and Natural Inflation”
- [24] Great Lakes Cosmology Conference
University of Michigan, April 1993
“Horizons in Cosmology”
- [25] Cosmic Ray Institute
Tokyo, Japan, June 1993
“The Horizon Problem in Cosmology”
- [26] Physics Department, Kyoto University
Kyoto, Japan, June 1993

- “The Horizon Problem in Cosmology”*
- [27] Canadian Institute for Theoretical Astrophysics
Toronto, Canada, November 1993
“Natural Inflation”
- [28] University of Heidelberg
Heidelberg, Germany, December 1993
“Natural Inflation”
- [29] Second Great Lakes Cosmology Conference
Yerkes Observatory, Wisconsin, May 1994
“Inflation: from Theory to Observations and Back”
- [30] Coral Gables Meeting on Unified Symmetries
Miami, Florida, February 1995
“Theoretical Status of Inflation”
- [31] Theoretical Physics Seminar
Boston University, Boston, MA, November 1995
“Theoretical Status of Inflation”
- [32] Coral Gables Meeting on Unified Symmetries
Miami, Florida, January 1996
“Testing Inflationary Cosmology”
- [33] Theoretical Physics Seminar
University of Florida, Gainesville, FL, Nov. 1996
“Theoretical Status of Inflationary Cosmology”
- [34] Coral Gables Meeting on Unified Symmetries
Miami, Florida, January 1997
*“Limits on Baryonic Dark Matter: Red Dwarfs, Brown Dwarfs, and White Dwarfs
in our Galactic Halo”*
- [35] High Energy Physics/Astrophysics Seminar
University of Michigan, March 1997
“Is the Halo of our Galaxy made of Baryons?”
- [36] Astrophysics Seminar
Notre Dame University, April 1998
“What are Machos?”
- [37] Cosmology Seminar
CERN, Geneva, Switz., May 1999
“Status of Baryonic Dark Matter”
- [38] Astroparticle Physics Sonderforschungsbereich Workshop
Ringberg Castle, Tegernsee, Germany, October 1999
“Death of Baryonic Dark Matter”
- [39] Particle Physics Seminar
Saclay, France, November 1999
“Death of Baryonic Dark Matter”
- [40] Astroparticle Physics Seminar
Case Western University, Cleveland, OH, Feb. 2000
“Dark Matter in the Halo of our Galaxy”

- [41] Harvard/MIT/BU Joint Theory Seminar
Boston, MA, March 2000
“Death of Stellar Dark Matter: Nonbaryonic Dark Matter seems to be Required”
- [42] Particle Theory Seminar
University of Florida, Gainesville, FL, March 2000
“What is the Dark Matter in the Halo of our Galaxy?”
- [43] Astrophysics Workshop
Aspen Center for Physics, Aspen, CO, January 2001
“Dark Matter”
- [44] Theory Seminar
University of Pennsylvania, April 2001
“Dark Matter”
- [44] Theory Seminar
Syracuse University, Oct. 2001
“New Solutions to the Horizon Problem in Braneworlds”
- [45] ISCAP (Institute for Strings, Cosmology, and Particles) Seminar
Columbia University, Feb. 2002
“Cardassian Expansion: A Model in Which the Universe is Flat, Matter Dominated, and Accelerating”
- [46] Astronomy Talk
Columbia University, March 2002
“Cardassian Expansion: A Model for an Accelerating Universe”
- [47] Astrophysics Seminar
Fermilab, Batavia, IL, April 2002
“Cardassian Expansion: A Model in Which the Universe is Flat, Matter Dominated, and Accelerating”
- [48] Astrophysics Seminar
New York University, May 2002
The Cardassian Universe: A Model in which the Universe is Flat, Matter Dominated, and Accelerating
- [49] Kavli Institute for Theoretical Physics Seminar
Santa Barbara, CA, December 2002
Introduction to Cosmology for Condensed Matter Physicists
- [50] Relativity Seminar
Princeton University, March 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
- [51] Theory Seminar
Perimeter Institute, Waterloo, Ontario, Canada, Oct. 2003.
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
- [52] Astrophysics Seminar
Canadian Institute for Theoretical Astrophysics, Toronto, Canada, Oct. 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
- [53] Astrophysics/High Energy Physics Seminar
University of Michigan, Nov. 2003

- Cardassian Expansion: Dark Energy from Modified Friedmann Equations*
- [54] Astrophysics Seminar
University of Notre Dame, Nov. 2003
- Cardassian Expansion: Dark Energy from Modified Friedmann Equations*
- [55] Theory Seminar, Physics Dept.
University of Florida, December 2004
- Cardassian Expansion: Dark Energy from Modified Friedmann Equations*
- [56] Theory Seminar, Physics Dept.
Harvard University, February 2005
- Chain Inflation*
- [57] Particle Theory Seminar
Stanford Linear Accelerator, April 2005
- Cardassian Expansion: Dark Energy from Modified Friedmann Equations*
- [58] Astrophysics Seminar
University of Utah, November 2006
- Chain Inflation*
- [59] Particle Theory Seminar
SLAC, April 2006
- Natural Inflation after WMAP*
- [60] Theory Seminar
Imperial College, London, England, June 2006
- Inflation after WMAP*
- [61] Miller Institute Seminar
University of CA, Berkeley, CA, September 2006
- The Dark Side of the Universe*
- [62] Astrophysics/High Energy Physics Seminar
University of Michigan, October 2006
- Inflation after WMAP*
- [63] Particle Theory Seminar
University of California, Berkeley, Feb. 2007
- Naturalness in Inflation*
- [64] CosmoClub Seminar
University of California, Santa Cruz, March 2007
- Naturalness in Inflation*
- [65] Theory Seminar
Lawrence Berkeley Labs, Berkeley, CA, May 2007
- Dark Stars*
- [66] Perimeter Institute/CITA Joint Astrophysics Talk
Perimeter Institute, Waterloo, CA, October 2007
- Dark Stars: A new Phase of Stellar Evolution*
- [67] University of Minnesota Theory Seminar
University of Minnesota, Minneapolis, MN, December 2008
- Dark Stars*
- [68] Theory Seminar

- University of Florida, Feb. 2009
Dark Stars: Dark Matter Heating can power the first stars
- [69] Theory Seminar
 Case Western Reserve, March 2009
Dark Stars
- [70] Theory Seminar
 University of Texas, May 2009
Dark Stars
- [71] Theory Seminar
 Vanderbilt Univ., April 2010
Dark Stars

Conferences Organized:

- [1] First Great Lakes Cosmology Conference
 Ann Arbor, MI, May 1993
- [2] Coral Gables Meeting on Unified Symmetries
 Miami, Florida, January 1994
- [3] Dark Matter Conference
 Berkeley, March 1994
- [4] Focal Week on Women in Physics
 Aspen Center for Physics, July 1994
- [5] Coral Gables Meeting on Unified Symmetries
 Miami, Florida, February 1995
- [6] The Inflationary Universe: from Theory to Observation and Back (three week workshop)
 Aspen Center for Physics, August 1995
- [7] Coral Gables Meeting on Unified Symmetries
 Miami, Florida, January 1996
- [8] Microlensing Workshop (two weeks)
 Aspen Center for Physics, May-June 1997
- [9] David N. Schramm Memorial Symposium: Inner Space/ Outer Space II
 Fermilab, May 1999
- [10] The Effects of Sun on Climate
 Tucson, Arizona, March 2000
- [11] Strings 2000
 Ann Arbor, MI, May 2000
- [11] Third International Workshop on the Identification of Dark Matter
 York, England, September 2000
- [12] "2001: A Spacetime Odyssey," the Inaugural Conference of the Michigan Center for Theoretical Physics
 Ann Arbor, MI, May 2001
- [13] Cosmic Microwave Background/Dark Matter/Dark Energy
 Institute for Theoretical Physics, Santa Barbara, fall 2002
- [14] COSMO 2002 International Workshop on Particle Physics and the Early Universe
 Chicago, IL, Sept. 2002

- [15] Fourth International Workshop on the Identification of Dark Matter
York, England, Sept. 2002
- [16] The New Cosmology Confronts Observation: CMB, Dark Matter, Dark Energy, and
Braneworlds
Kavli Institute for Theoretical Physics, Santa Barbara, Aug.-Dec. 2002
- [17] Great Lakes Cosmology Workshop
University of Michigan, Ann Arbor, MI, May 2003
- [18] Chair, Organizing Committee, Workshop on “The Dark Side”
University of Michigan, Ann Arbor, MI, May 2004
- [19] International Advisory Committee, Fifth International Workshop on the Identifica-
tion of Dark Matter
York, England, Sept. 2004
- [20] Convener, COSMO-04 International Workshop on Particle Physics and the Early
Universe
Toronto, Canada, Sept. 2004
- [21] Convener, the “String Cosmology Gong Show”
Perimeter Institute, Waterloo, Canada, March 2005
- [22] Member, International Organizing Committee, 7th UCLA Symposium on Sources
and Detection of Dark Matter and Dark Energy in the Universe
Santa Monica, LA, Feb. 2006
- [23] Organizer, MCTP workshop on Inflation after WMAP
Ann Arbor, MI, May 2006
- [24] Member, Scientific Advisory Committee, IDM 2006, 6th International Workshop on
the Identification of Dark Matter
Rhodes, Greece, Sept. 2007
- [25] Member, International Organizing Committee, 8th UCLA Symposium on Sources
and Detection of Dark Matter and Dark Energy in the Universe
Santa Monica, CA, Feb. 2008
- [26] Chair, Organizing Committee for MCTP Dark Side workshop
Ann Arbor, MI, May/June 2008
- [27] Member, Advisory Committee for IDM2008 - Identification of Dark Matter 2008
Stockholm, Sweden, August 2008
- [28] Chair, Organizing Committee
The Dark Side II Workshop (3 week workshop)
Michigan Center for Theoretical Physics, Ann Arbor, May-June 2008
- [29] Member, International Organizing Committee, 9th UCLA Symposium on Sources
and Detection of Dark Matter and Dark Energy in the Universe
Santa Monica, CA, Feb. 2010
- [30] Chair, Organizing Committee
Dark Stars Workshop
Michigan Center for Theoretical Physics, Ann Arbor, October 2009
- [31] Member, Advisory Committee for IDM2010 - Identification of Dark Matter 2010
Montpellier, France, July 2010

- [32] Member, Advisory Committee for 12th International Conference on Topics in Astroparticle and Underground Physics, TAUP 2011, Munich, Germany, Sept. 2011
- [33] International organizer, "Dark Matter and New Physics", Kavli Institute for Theoretical Physics China (KITPC), Beijing, China, Sept. - Nov. 2011.
- [34] Member, International Organizing Committee, 10 th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe Santa Monica, CA, Feb. 2012

Teaching Experience:

- [1] Sections in Freshman Mechanics, MIT, fall 1988
- [2] Sections in Freshman Electromagnetism, MIT, winter 1989
- [3] Graduate Cosmology, MIT, fall 1989
- [4] Relativity, MIT, winter 1990
- [5] Graduate Electromagnetism (textbook: Jackson), MIT, fall 1990
- [6] Relativity, MIT, winter 1991
- [7] Graduate Cosmology, University of Michigan, fall 1991
- [8] Graduate Electromagnetism (textbook: Jackson), University of Michigan, fall 1992 and winter 1993
- [9] Graduate Cosmology, University of Michigan, fall 1993
- [10] Advanced Technical Presentations, University of Michigan, winter 1994
- [11] Statistical and Thermal Physics, University of Michigan, fall 1994
- [12] Particle Physics of the Early Universe, University of Michigan, winter 1995
- [13] Graduate Cosmology, University of Michigan, fall 1995
- [14] Conceptual Physics ("Physics for Poets"), University of Michigan, winter 1996
- [15] Freshman Seminar in 'The Early Universe', University of Michigan, fall 1996
- [16] Conceptual Physics ("Physics for Poets"), University of Michigan, winter 1997
- [17] Graduate Cosmology, University of Michigan, winter 1998
- [18] Freshman Seminar in 'The Early Universe', University of Michigan, fall 1998
- [19] Quantum Mechanics (junior level), University of Michigan, winter 1999
- [20] Graduate Cosmology, University of Michigan, winter 2000
- [21] Quantum Mechanics (junior level), University of Michigan, fall 2000
- [22] Quantum Mechanics (second semester, junior level), University of Michigan, winter 2001
- [23] Freshman Seminar in "The Early Universe", University of Michigan, fall 2001
- [24] Graduate Cosmology, University of Michigan, winter 2003
- [25] Advanced Cosmology, University of Michigan, winter 2004
- [26] Freshman Seminar on "The Early Universe", University of Michigan, fall 2004
- [27] Senior Writing Course, U of M winter 2005
- [28] Origin, and Fate of Life, Stars, Galaxies, and the Universe, Univ. of MI, winter 2005
- [29] Graduate Cosmology, U of M fall 2005
- [30] Senior Writing Course, U of M winter 2006

- [31] The Fate and Origins of Planets, Stars, and Life in the Universe, Univ. of MI, winter 2006
- [32] Graduate Astrophysics, fall 2008
- [33] Freshman Seminar on Cosmology, winter 2009
- [34] Quantum Mechanics, fall 2009
- [35] Cosmology, Fall 2010

Graduate Students and Postdocs:

1. My graduate student, Janna Levin, received her PhD in Physics from MIT in 1994. Her postdoctoral positions were at the Canadian Institute for Theoretical Astrophysics (CITA) in Toronto and the Center for Particle Astrophysics at Berkeley. Then she held a PPARC fellowship in Cambridge, England. Currently she is an Assoc. Prof. at Barnard/Columbia University.
2. My graduate student, Jay Jubas, received his PhD in Physics from MIT in 1994. He took a permanent position with Lincoln Labs at MIT.
3. My former postdoctoral associate, Hume Feldman, subsequently took a postdoc in the Physics Department of Princeton University. Presently he is Professor at Kansas University.
4. My former postdoctoral associate, Ira Rothstein, subsequently took a postdoc with the Physics Department of the University of California at San Diego. Presently he is Professor of Physics at Carnegie Mellon.
5. My former graduate student, Hideyuki Umeda, PhD 1998, is a group leader and Professor of Astronomy, University of Tokyo.
6. My former graduate student, David Graff, PhD 1999, took a postdoctoral position funded by the French Government via the Bourse Chateaubriand Fellowship; he worked with the EROS group in Saclay. Subsequently he held a postdoctoral position at Ohio State, then taught at the Merchant Marine Academy, then was at the Museum of Natural History in NY. Currently he is on the staff of the Physics group in oncology at the University of Pittsburgh.
7. Although not officially her advisor, I supervised the work of Applied Physics Student Beth Weinberg, PhD 2001, who worked on wavelet analysis of ozone data for her thesis. She subsequently obtained a position with Lincoln Labs at MIT, and then Environmental Research Institute of Michigan in Ann Arbor, currently General Dynamics Co.
8. My former graduate student Matt Lewis, PhD 2003, is Principal Scientist, Physics Division, General Dynamics Advanced Information Systems, General Dynamics Corporation, Ann Arbor, MI.
9. Former student Mira Franke, PhD 2003, is now Asst. Prof. at Raritan Reserve in New Jersey
10. My postdoctoral associate, Dan Chung, subsequently took a postdoctoral position at CERN. Currently he is an Associate Professor at the University of Wisconsin.
11. Former MCTP postdoctoral fellow Dejan Stojkovic is Associate Professor at The University at Buffalo.
12. My former student Chris Savage was a postdoctoral researcher at the University of Minnesota. In September 09 he joined the Oskar Klein Center for Cosmo Particle

Physics in Stockholm Sweden.

- [13. Former student Douglas Spolyar has a postdoctoral fellowship with the Fermilab Astrophysics Theory Group.

University Service:

2010: Search Committee for Physics Faculty Position
2010: Long Term Planning Committee for Physics Dept.
2010: Editorial Board Committee for Physics Dept.
2010: Honors Thesis Committee and Williams award
current: Faculty Advisor for women students in physics
fall 2009: Chair, Duan promotion committee
2008-2009: Physics Dept. Colloquium Committee
2005 – current: Associate Director, Michigan Center for Theoretical Physics
2005 – 2008: Member, University Rackham Executive Board for Graduate Affairs
2001–2006: Member, ADVANCE Steering Committee,
Institute for Research on Women and Gender
2005 - 2006: Member, Faculty Search Committee in Physics Dept.
2003-2007: Member, Faculty Advisory Committee on Financial Affairs
2003-2004: Member, Gender in Science and Engineering Committee for the
University of MI (chaired by Dean McDonald)
2004: Member, Terwilliger Award Committee
2004: Member, Search Committee for Associate Vice President for Research
2000-2003: Member of the Executive Committee of the Michigan Center for
Theoretical Physics
2001-2006: Member, Faculty Advisory Committee on Multicultural University
2002-2003: Member, Williams Award Committee
2002-2003: Member, Physics Web Pages Committee
2000-2001: Member of the Search Committee for a faculty position in
astrophysics in the Physics Dept.
1999-2002: Member of Faculty Advisory Committee to University General Counsel
1999-2002: Member, Library Committee
2000-2003, 1999, 1995, 1994: Physics Dept. Women Students' Advisory Committee
1998-1999: Search Committee, Vice President for Research of University of
Michigan
1996-1999: Member of University Senate
1998-1999: Marshal in the Honors Convocation program
1996-1998: Member of University Library Committee
1996-1998: Organizer of Martin Luther King Day events for Physics Dept.
1993-1996: Member, Astronomy Department Search Committee
1993-1994: Physics Faculty Search Committee for astrophysics position
1993: Chairman of Colloquium Committee
1993, 1990: Physics Graduate Admissions Committee
1992: Colloquium Committee
1991: Organizer of Astrophysics/High Energy Physics Seminar

Public Speaking

1. Cranbrook Science Institute Lecture
Birmingham, MI, April 2002
Cosmology for the New Millenium
2. Panel on Cosmology with Drs. Ed Witten, David Spergel, Dan Eisenstein, and Eric Wilcots
Princeton University, June 2002
Cosmology
3. Saturday Morning Physics Lectures (two lectures)
University of Michigan, April 2003
“Dark Matter and Dark Energy in the Universe”
4. University Commons Public Lecture
Ann Arbor, MI, March 2004
“Dark Matter and Dark Energy in the Universe”
4. Isaac Asimov Memorial Debate on “The Dark Side”
Hayden Planetarium, moderator Neal Tyson, participants:
Katherine Freese, Brian Greene, Robert Kirschner, and Tony Tyson
The Museum for Natural History, NY, NY, April 2004
5. “Origins: the University, Earth, and Life” Symposium
Ann Arbor, MI, January 2006
“From the Big Bang through the First Million Years”
6. Quirks and Quarks, Canadian Broadcast Company Radio Show
Toronto, CA, October 2009
7. Quantum to Cosmos, member of two panels on TVO (TV Ontario)
Perimeter Institute, Waterloo, CA, October 2009
can be found on youtube
8. Big Think Interview
NY, NY, March 2010
can be found on youtube
9. Low Brow Astronomy Society Lecture
Ann Arbor, MI, Oct. 2010
”The Dark Side”
9. Isaac Asimov Memorial Debate on “The Theory of Everything”
Hayden Planetarium, moderator Neal Tyson, participants:
Katherine Freese, Brian Greene, Janna Levin, and James Gates
The Museum for Natural History, NY, NY, March 2011

Press Coverage of My Work:

- [32] Scientific American, March 2010, article on Dark Stars
- [31] Science et Vie, March 2010, article on Dark Stars
- [30.] Sky and Telescope, March 2010, article on Dark Stars
- [29.] BBC Radio, Feb. 15 2008,
http://www.bbc.co.uk/worldservice/programmes/science_in_action.shtml,
I was interviewed regarding my work on Dark Stars.
- [28.] BBC online, Feb. 2008

- <http://news.bbc.co.uk/2/hi/science/nature/7252428.stm>,
 article written by Roland Pease
- [27.] Science News, Jan. 5, 2008,
 “Twinkle, Twinkle. Dark Matter may have lit up first stars,” p. 4, article by Sarah Williams,
<http://www.sciencenews.org/articles/20080105/fob5ref.asp>
- [26.] Physorg.com, Feb. 2008,
<http://www.physorg.com/news122034732.html>, article by Miranda Marquit.
- [25.] slashdot, Feb. 2008, regarding work on Dark Stars:
<http://science.slashdot.org/science/08/02/20/0031238.shtml>
- [24.] New Scientist, December 3, 2007
 “Universe’s First Stars may have been dark”, article by Maggie McKee
<http://space.newscientist.com/article/dn12996-universes-first-stars-may-have-been-dark.html>
- [23.] Science News, Week of Aug. 26, 2006; Vol. 170, No. 9 , p. 131,
 “Enlightened: Dark matter spotted after cosmic crash”
 article written by Eric Jaffe
- [22.] New Scientist, March 2005
 ”Thirteen Things that do not make sense”
 article written by Michael Brooks
- [21.] New Scientist, Feb. 2005
 ”The Future of the Universe”,
 article written by Stephen Battersby
- [20.] BBC program on National Public Radio, March 2004
 Dark Matter (http://www.bbc.co.uk/worldservice/programmes/sci_act.shtml)
 interview with Roland Pease
- [19.] BBC online, March 2004
 Dark Matter, <http://bbcnews.com/science>
 article written by Roland Pease
- [18.] New York Times, Feb. 2000
 “In the Dark Matter Wars, WIMPs beat MACHOs”
 article written by James Glanz, cover of Science Times including photograph
- [17.] Dallas Morning News, Feb. 2004
 “If Seeking Dark Matter, Beware Spherical Cows”
 article written by Tom Siegfried
- [16.] Nature, News and Views, May 2004
 “Life Can go on Forever”
 article written by Phillip Ball
- [15.] New York Times, Nov. 2003
 “What is Gravity, Really? (25 top Scientific Questions for the Coming Decade)”
 article by Dennis Overbye
- [14.] New Scientist, August 2002
 “Will Life Last Forever?”

- Cover article for the August edition, written by Phillip Ball
- [13.] Dallas News, Jan. 2002
 “Cardassian Math adds Dimension to the Universe”,
 article written by Tom Siegfried
 - [12.] New York Times, Feb. 2002
 “Germans’ Claim on Dark Matter is Greeted with Skepticism”
 article written by James Glanz
 - [11.] New Scientist, July 2002
 “Stargazer takes on Grand Theory”,
 article written by Eugenie Samuel
 - [10.] Boston Globe, March 2001
 “Dark Matter”,
 article written by Gareth Cooke
 - [9.] New York Times, Feb. 2000
 “Experiments at Stanford Shake Dark Matter Claim”,
 article written by James Glanz
 - [8.] The Associated Press, March 2000
 “Scientists Begin to Shed Light on Dark Matter”,
 article written by Matthew Fordahl
 - [7.] Space.com, April 2000
 “Feeling Around for Dark Matter”
 - [6.] Yahoo News, April 2000
 “Shedding Light on Dark Matter”
 - [5.] Scientific American, May 2000
 “What’s the Matter?”,
 article written by George Musser
 - [4.] cosmiverse.com, April 2000
 “Lighting up Dark Matter”
 - [3.] Dallas Morning News, July 5, 1999
 “Stretching your Brane: Hidden Space Dimensions may permit Parallel Universes,
 Explain Cosmic Mysteries”,
 article written by Tom Siegfried
 - [2.] Dallas Morning News, Feb. 22, 1999
 “Mirror, mirror out in space may solve MACHO mystery”,
 article written by Tom Siegfried
 - [1.] Scientific American, 1999
 article on “Dark Matter”