

Katherine Freese**Director, Nordic Institute for Theoretical Physics (Nordita)**

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George E. Uhlenbeck Professor of Physics

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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
1991-99	Associate Professor of Physics (with tenure), University of Michigan
1999-2009	Professor of Physics, University of Michigan
2009–	George E. Uhlenbeck Professor of Physics, University of Michigan
2014–	Director, Nordic Institute for Theoretical Physics (Nordita)

Awards, Honors and National/International Service:

2013: Invited lecturer at Carl Friedrich von Siemens Foundation "Nymphenburg Talks",
Nymphenburg Palace, Munich, Germany

2012: Awarded Honorary Doctorate (Honoris Causa) at the University of Stockholm

2012: Simons Foundation Fellowship in Theoretical Physics

2011-2012: Member, Executive Board of the American Physical Society

2009– : named George E. Uhlenbeck Professor of Physics at the Univ. of Michigan

2009– : named Fellow, American Physical Society

2009– : Member, International Advisory Board, Oskar Klein Center for CosmoParticle Physics,
Stockholm, Sweden

2008-2113: American Physical Society General Councillor

2005-2008: Member, Astronomy and Astrophysics Advisory Committee (AAAC) reporting to Congress

2007: Visiting Professor, Perimeter Institute for Theoretical Physics

2006-2007: Visiting Miller Professor, UC Berkeley

2006: NSF Panel to evaluate Theory Proposals

2006: Reviewer, Deep Underground Science and Engineering Laboratory (DUSEL)

2006-2007: Member, Dark Matter Scientific Advisory Group (DMSAG) reporting to DOE and NSF
 2005: External Review Committee, Physics Dept. Temple University
 2003: External Review Committee, Purdue University
 2001: Member of the Steering Committee of the Institute for Theoretical Physics in Santa Barbara
 2000-2005: Member of the Board of the Institute for Theoretical Physics in Santa Barbara, CA
 2000: NASA panel to select Astrophysics Theory Grants
 1996-1998: National Research Council panel to select NRC Postdoctoral Fellows
 1993-2003: General Member of the Board, Aspen Center for Physics
 1990: Selection committee for NSF Faculty Awards for Women
 1990-1995: NSF Presidential Young Investigator Award
 1989-1991: Sloan Foundation Fellowship
 1986: President's Fellowship of the University of California
 1983-84: William Rainey Harper Fellowship of the University of Chicago

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, 1993-2003
 American Physical Society, Councillor (2008-2111); Executive Board (2011–)
 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:

Fall 2013, Visiting Professor, CERN, Geneva, Switzerland
 January-July 2012, Visiting Professor, Caltech, Pasadena, CA
 January-August 2011, Visiting Professor, University of Texas, Austin, TX
 May 2009, Distinguished Visitor, University of Texas, Austin, TX
 2007-2008, Visiting Professor at Perimeter Institute for Theoretical Physics, Waterloo, Canada
 Sept 2006-July 2007, Visiting Miller Professor, UC Berkeley, CA
 October 2006, visitor, Galileo Galilei Institute, Florence, IT
 Fall 2002, Organizer of six month workshop on “The New Cosmology Confronts Observation,”
 KITP (Kavli Institute for Theoretical Physics), Santa Barbara, CA
 Winter 2002, Visiting Professor, ISCAP (Institute for Strings, Cosmology,
 and Astroparticle Physics), Columbia University, NY
 July-August 2001, visitor, Max Planck Institut für Physik und Astrophysik,
 Munich, Germany
 April-May 2001, visitor, University of Pennsylvania Physics Dept.
 May-December 1999, August 2000, and July-August 2001, visitor, Max Planck
 Institut für Physik und Astrophysik, Munich, Germany

April-May 1999, visitor, CERN, Geneva, Switzerland
 July-August 1998, visitor, Max Planck Institut für Physik und Astrophysik,
 Munich, Germany
 July-December 1997, Senior Program Officer, Board of Atmospheric Sciences
 and Climate, National Research Council, National Academy of Sciences,
 Washington, D.C.
 May-June 1996 visitor, Fermilab Theoretical Astrophysics Group
 Spring 1995 visitor, Institute for Theoretical Physics, University of California,
 Santa Barbara, CA
 Winter 1992 visitor, Institute for Theoretical Physics, University of California,
 Santa Barbara, CA
 Summer 1991 visitor, Max Planck Institut für Physik, Munich, Germany
 1981-82 Fermi National Accelerator Laboratory, experimental high-energy research looking
 for neutrino oscillations
 1981 Bell Labs (Murray Hill, NJ), research assistant studying crystal
 surface properties
 1980 CESR (Cornell), research assistant for Columbia-Stony Brook experiment (CUSB)
 1978 SLAC, research assistant in experimental high-energy physics
 1978 Stanford University, research assistant for Crystal Ball Experiment
 1974 National Institutes of Health, research in molecular biology with Dr. M. Nirenberg

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.
10. In April 2012 I started a Cosmology Task in the DOE grant together with D. Huterer.
11. 2012-2013: MCUBED grant for multidisciplinary research at the University of Michigan, “Dark Matter Detectors using DNA”
 Co-investigators: David Gerdes and Rachel Goldman

12. 2014-2024: Swedish Research Council, VR, awarded an "Excellence grant for astroparticle physics," 101 million Swedish Crowns (roughly 15 million US dollars) over 10 years.

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 , 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.* **D70** (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.* **D71** (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, *JCAP* **03** (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.* **D79**: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. arXiv:0808.3607 [astro-ph]
98. “Slow nucleation rates in Chain Inflation with QCD Axions or Monodromy,” A. Ashoorioon, K. Freese, J. T. Liu, arXiv:0810.0228 [hep-ph], *Phys. Rev.***D79**:067302, 2009.
99. “Gravity Waves from Chain Inflation,” A. Ashoorioon, K. Freese, 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. 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.* **D79**: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., RCMAS) , Rohta Takahashi, (Wako, RIKEN) , Naoki Yoshida, (Tokyo U., IPMU). *Phys. Rev.* **D80**: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, *Phys. Rev.* **D83**:055002, 2011.
117. “Dark Stars and Boosted Dark Matter Annihilation Rates.” Cosmin Ilie, Katherine Freese, and Douglas Spolyar, e-Print: arXiv:1008.0348, *New J. Phys.* **13**:053050, 2011.
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], *Phys. Rev.* **D84**:015007, 2011.
120. “Probing EWSB Naturalness in Unified SUSY Models with Dark Matter.” Stephen Amsel, Katherine Freese , Pearl Sandick, e-Print: arXiv:1108.0448 [hep-ph], *JHEP* **2011**, 110 (2011)
121. “Gamma-Ray Constraints on the First Stars from Annihilation of Light WIMPs.” Pearl Sandick, Juerg Diemand, Katherine Freese, Douglas Spolyar, e-Print: arXiv:1108.3820 [astro-ph.CO], *Phys.Rev.D* **85** 083519 (2012)
122. “Probing dark matter streams with CoGeNT.” Aravind Natarajan, Christopher Savage, Katherine Freese, e-Print: arXiv:1109.0014 [astro-ph.CO], *Phys. Rev. D* **84**, 103005 (2011)

123. "Observing Dark Stars with JWST." Cosmin Ilie, Katherine Freese, Monica Valluri, Ilian T. Iliev, Paul Shapiro, e-Print: arXiv:1110.6202 [astro-ph.CO], MNRAS 422 (2012) 2164-2186
124. "A Goldstone "Miracle": The Absence of a Higgs Fine Tuning Problem in the Spontaneously Broken O(4) Linear Sigma Model." Bryan W. Lynn, Glenn D. Starkman, Katherine Freese, Dmitry I. Podolsky, arXiv:1112.2150
125. "Dark Matter collisions with the Human Body," K. Freese and C. Savage, Phys.Lett. B717 (2012) 25-28.
126. "New Dark Matter Detectors using DNA for Nanometer Tracking," A. Drukier, K. Freese, D. Spergel, C. Cantor, G. Church and T. Sano, to be published, Proceedings of the National Academy of Sciences, arXiv:1206.6809 [astro-ph.IM].
127. "Numerical Evidence for Dark Star Formation: A Comment on "Weakly Interacting Massive Particle Dark Matter and First Stars: Suppression of Fragmentation in Primordial Star Formation" by Smith et al. 2012, ApJ 761, 154," P. Gondolo, K. Freese, D. Spolyar and P. Bodenheimer, arXiv:1304.7415 [astro-ph.CO].
128. "First Test of Gravity Waves from Inflation using Advanced LIGO," A. Lopez and K. Freese, arXiv:1305.5855 [astro-ph.HE].
129. "Neutralino Dark Matter with Light Staus," A. Pierce, N. R. Shah and K. Freese, arXiv:1309.7351 [hep-ph].
130. "Annual Modulation of Dark Matter: A Review," K. Freese, M. Lisanti, and C. Savage, Rev.Mod.Phys. 85 (2013) 1561-1581
131. "New Class of Biological Detectors for WIMPs," A. Drukier, C. Cantor, M. Chudnowski, G. Church, R. Fagaly, K. Freese, A. Lopez, T. Sano, C. Savage, W. Wong, arXiv:1403.8154 [astro-ph.IM], Int. J. of Modern Physics A, 29, 1443007 (2014)
132. "Natural Inflation: Consistency with Cosmic Microwave Background Observations of Planck and BICEP2," K. Freese and W. H. Kinney, " arXiv:1403.5277 [astro-ph.CO].
133. "New Dark Matter Detectors using Nanoscale Explosives," Alejandro Lopez, Andrzej Drukier, Katherine Freese, Cagliyan Kurdak, and Gregory Tarle, arXiv:1403.8115 [astro-ph.IM].
134. "Negative running prevents eternal inflation," William H. Kinney and Katherine Freese, arXiv:1404.4614 [astro-ph.CO].
135. "Dark Stars: A Review," K. Freese, D. Spolyar, and M. Valluri, in preparation, I have been asked to write this for Reports on Progress in Physics.

Results Quoted in Particle Data Book

See references 33 and 48 above.

Books

1. *The Cosmic Cocktail: Three Parts Dark Matter*
Katherine Freese
Princeton University Press, published June 2014.

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], Prepared for IDM 2010: 8th International Workshop on Identification of Dark Matter 2010, Montpellier, France, 26-30 Jul 2010. Published in PoS IDM2010:086,2011.
45. "Searches for Dark Matter in the Universe: a Review," Review talk for the XXVII Texas Symposium on Relativistic Astrophysics in Dallas in December 2013. The proceedings are posted here: <http://nsm.utdallas.edu/texas2013/proceedings/1/4/g/Freese.pdf>
46. "Cosmology after Fifty Years of Texas Meetings," Summary talk for the XXVII Texas Symposium on Relativistic Astrophysics in Dallas in December 2013. The proceedings are posted here: <http://nsm.utdallas.edu/texas2013/proceedings/5/2/>

Invited Talks –

Invited Talks: 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
Stokholm, 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
78. Giant Magellan Telescope Conference
Texas A&M, College Station, Texas, March 2011
Dark Stars
79. Physics of the Universe Conference
Los Angeles/Caltech, CA, December 2010
Dark Stars
80. Inflation Conference
Texas A&M, College Station, Texas, March 2011
Chain Inflation
81. DEUS Conference, Dark Cosmology Center
Copenhagen, Denmark, August 2011
Summary Talk of the Conference
82. COSMO Conference
Porto, Portugal, August 2011
Dark Matter Theory: a Review
83. Pre-Planckian Inflation Conference
Minneapolis, MN, October 2011
Chain Inflation
84. Inflationary Cosmology Workshop
Aspen, CO, February 2012
Chain Inflation
85. Tenth Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe
Marina del Rey, CA, February 2012
Dark Stars
86. Silver Jubilee Dark Matter Meeting
Pacific National Laboratory, Richland, WA, June 2012
Panel on The Foundations of Dark Matter Searches
87. Silver Jubilee Dark Matter Meeting
Pacific National Laboratory, Richland, WA, June 2012
Dark Matter Detectors using DNA
88. Silver Jubilee Dark Matter Meeting
Pacific National Laboratory, Richland, WA, June 2012
Dark Stars
89. Science Writers 2012 Meeting
North Carolina Research Triangle, Raleigh, NC, October 2012
Dark Matter: Presentation for Science Writers
90. Science Writers 2012 Meeting
North Carolina Research Triangle, Raleigh, NC, October 2012
Dark Stars: Presentation for Science Writers
91. Physics of the Universe Summit
Caltech, January 2013
Dark Matter Detectors using DNA
92. Hunting for Dark Matter Conference
KITP Santa Barbara, May 2013
Dark Matter Detectors using DNA

93. Carolina International Symposium on Neutrino Physics
University of South Carolina, May 2013
Dark Matter Detectors using DNA
94. 2013 Texas Symposium on Relativistic Astrophysics
Dallas, TX, December 2013
Review of Dark Matter Detection
95. 2013 Texas Symposium on Relativistic Astrophysics
Dallas, TX, December 2013
Summary Talk for the Conference
96. Aspen Winter Meeting on LHC and Dark Matter
Aspen Center for Physics, Jan. 2014
Dark Matter Detectors using DNA
97. Eleventh Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe
UCLA, CA, March 2014
Inflation after the Planck Satellite
98. Workshop on Bacteria Meet Physics
Aspen Center for Physics, June 2014
Dark Matter Detectors using DNA
99. International Committee for Future Accelerators (ICFA)
Beijing, China, October 2014
Particle Astrophysics & Cosmology

Invited Talks: 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 Universität, Munich, Germany, December 1995
"Testing Inflationary Cosmology"
20. 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 für 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 für Physik, München, 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"
39. 100 Years Beyond Einstein Theme Semester Colloquium, Univ. of MI
Ann Arbor, MI, December 2005
"The Expanding Universe and Big Bang Cosmology"

40. Physics/Astronomy Colloquium
University of Utah, March 2006
"Inflationary Cosmology: from Theory to Observation and Back"
41. Physics Colloquium
University of California, Berkeley, March 2007
"Inflationary Cosmology: from Theory to Observation and Back"
42. Physics Colloquium
Temple University, January 2008
"Cosmology in this Millenium"
43. Institute for Theoretical Physics and Astronomy Colloquium
Heidelberg, Germany, July 2008
"Dark Stars: A New Phase of Stellar Evolution"
44. Physics Colloquium
Columbia University, October 2008
"Dark Matter"
45. Physics Colloquium
University of Florida, Feb. 2009
"Dark Matter in the Universe"
46. Physics/Astronomy Colloquium
Yale University, March 2009
"Dark Matter"
47. Physics/Astronomy Colloquium
Southern Methodist University, May 2009
"Dark Matter"
48. Physics/Astronomy Colloquium
University of Maryland, October 2009
"Dark Matter in the Universe"
49. Physics/Astronomy Colloquium
University of North Carolina, Chapel Hill, Feb. 2010
"Dark Matter in the Universe"
50. Astronomy Colloquium
NOAO/University of Arizona, March 2010
"Dark Stars"
51. Initiative for the Theoretical Sciences Colloquium
CUNY Graduate Center, 365 Fifth Avenue, NY, NY, April 2010
"The Dark Side of the Universe"
52. Physics/Astronomy Colloquium
Vanderbilt University, April 2010
"Dark Matter in the Universe"
53. Faye Ajzenberg-Selove Physics Colloquium
University of Wisconsin, Madison, April 2010
"Dark Matter in the Universe"
54. Astronomy Colloquium
University of Texas, Austin, January 2011
"What is Dark Matter?"
55. Physics Colloquium
Caltech, Pasadena, CA, April 2012
"Dark Matter in the Universe"

56. Physics Colloquium
Institut d'Astrophysique, Paris, FR, September 2012
"Dark Matter in the Universe"
57. Oskar Klein Center Colloquium
Oskar Klein Center for Cosmoparticle Physics, Stockholm, Sweden, September 2012
"Dark Matter in the Universe and the ssDNA Tracker"
58. Theoretical Physics Colloquium
CERN, Geneva, Switzerland, October 2012
"Dark Stars: Dark Matter Annihilation can power the First Stars"
59. CERN Colloquium
CERN, Geneva, Switzerland, October 2012
"Dark Matter in the Universe"
60. JPL Colloquium
Jet Propulsion Laboratory, Caltech, Pasadena, CA, May 2013
"Inflation after the Planck Satellite"
61. Michigan Center for Theoretical Physics Colloquium
Ann Arbor, MI, April 2014
Inflation after BICEP2

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"
45. Theory Seminar
Syracuse University, Oct. 2001
"New Solutions to the Horizon Problem in Braneworlds"
46. 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"
47. Astronomy Talk
Columbia University, March 2002
"Cardassian Expansion: A Model for an Accelerating Universe"
48. Astrophysics Seminar
Fermilab, Batavia, IL, April 2002
"Cardassian Expansion: A Model in Which the Universe is Flat, Matter Dominated, and Accelerating"
49. Astrophysics Seminar
New York University, May 2002
The Cardassian Universe: A Model in which the Universe is Flat, Matter Dominated, and Accelerating
50. Kavli Institute for Theoretical Physics Seminar
Santa Barbara, CA, December 2002
Introduction to Cosmology for Condensed Matter Physicists
51. Relativity Seminar
Princeton University, March 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
52. Theory Seminar
Perimeter Institute, Waterloo, Ontario, Canada, Oct. 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
53. Astrophysics Seminar
Canadian Institute for Theoretical Astrophysics, Toronto, Canada, Oct. 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
54. Astrophysics/High Energy Physics Seminar
University of Michigan, Nov. 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations

55. Astrophysics Seminar
University of Notre Dame, Nov. 2003
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
56. Theory Seminar, Physics Dept.
University of Florida, December 2004
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
57. Theory Seminar, Physics Dept.
Harvard University, February 2005
Chain Inflation
58. Particle Theory Seminar
Stanford Linear Accelerator, April 2005
Cardassian Expansion: Dark Energy from Modified Friedmann Equations
59. Astrophysics Seminar
University of Utah, November 2006
Chain Inflation
60. Particle Theory Seminar
SLAC, April 2006
Natural Inflation after WMAP
61. Theory Seminar
Imperial College, London, England, June 2006
Inflation after WMAP
62. Miller Institute Seminar
University of CA, Berkeley, CA, September 2006
The Dark Side of the Universe
63. Astrophysics/High Energy Physics Seminar
University of Michigan, October 2006
Inflation after WMAP
64. Particle Theory Seminar
University of California, Berkeley, Feb. 2007
Naturalness in Inflation
65. CosmoClub Seminar
University of California, Santa Cruz, March 2007
Naturalness in Inflation
66. Theory Seminar
Lawrence Berkeley Labs, Berkeley, CA, May 2007
Dark Stars
67. Perimeter Institute/CITA Joint Astrophysics Talk
Perimeter Institute, Waterloo, CA, October 2007
Dark Stars: A new Phase of Stellar Evolution
68. University of Minnesota Theory Seminar
University of Minnesota, Minneapolis, MN, December 2008
Dark Stars
69. Theory Seminar
University of Florida, Feb. 2009
Dark Stars: Dark Matter Heating can power the first stars
70. Theory Seminar
Case Western Reserve, March 2009
Dark Stars

71. Theory Seminar
University of Texas, May 2009
Dark Stars
72. Theory Seminar
Vanderbilt Univ., April 2010
Dark Stars
73. Theory Seminar
University of Utah, November 2011
Dark Stars
74. TAPIR Seminar
Astronomy Dept, Caltech, Pasadena, CA April 2012
Dark Stars
75. Astrophysics Seminar
Carnegie Observatories, Pasadena, CA June 2012
Dark Stars
76. Seminar on Biology and Physics
Rockefeller University, NY, NY September 2012
Novel Approach to Dark Matter Detectors using DNA
77. Particle Astrophysics Seminar
Center for Particle Astrophysics, Paris, FR October 2012
Novel Approach to Dark Matter Detectors using DNA
78. Astrophysics Seminar
Princeton University, July 2013 *Natural Inflation after PLANK*
79. Dark Matter Seminar
Princeton University, July 2013 *Dark Matter Detectors using DNA*
80. Institute for Strings, Cosmology and Particle Physics Seminar
Columbia University, NY, April 2014
Inflation after Planck and BICEP2

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
12. Third International Workshop on the Identification of Dark Matter
York, England, September 2000
13. "2001: A Spacetime Odyssey," the Inaugural Conference of the Michigan Center for Theoretical Physics
Ann Arbor, MI, May 2001
14. Cosmic Microwave Background/Dark Matter/Dark Energy
Institute for Theoretical Physics, Santa Barbara, fall 2002
15. COSMO 2002 International Workshop on Particle Physics and the Early Universe
Chicago, IL, Sept. 2002
16. Fourth International Workshop on the Identification of Dark Matter
York, England, Sept. 2002
17. The New Cosmology Confronts Observation: CMB, Dark Matter, Dark Energy, and Braneworlds
Kavli Institute for Theoretical Physics, Santa Barbara, Aug.-Dec. 2002
18. Great Lakes Cosmology Workshop
University of Michigan, Ann Arbor, MI, May 2003
19. Chair, Organizing Committee, Workshop on "The Dark Side"
University of Michigan, Ann Arbor, MI, May 2004
20. International Advisory Committee, Fifth International Workshop on the Identification of Dark Matter
York, England, Sept. 2004
21. Convener, COSMO-04 International Workshop on Particle Physics and the Early Universe
Toronto, Canada, Sept. 2004
22. Convener, the "String Cosmology Gong Show"
Perimeter Institute, Waterloo, Canada, March 2005
23. 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
24. Organizer, MCTP workshop on Inflation after WMAP
Ann Arbor, MI, May 2006
25. Member, Scientific Advisory Committee, IDM 2006, 6th International Workshop on the Identification of Dark Matter Dark Energy in the Universe
Rhodes, Greece, Sept. 2007
26. 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
27. Chair, Organizing Committee for MCTP Dark Side workshop
Ann Arbor, MI, May/June 2008
28. Member, Advisory Committee for IDM2008 - Identification of Dark Matter 2008
Stockholm, Sweden, August 2008
29. Chair, Organizing Committee
The Dark Side II Workshop (3 week workshop)
Michigan Center for Theoretical Physics, Ann Arbor, May-June 2008

30. 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
31. Chair, Organizing Committee
Dark Stars Workshop
Michigan Center for Theoretical Physics, Ann Arbor, October 2009
32. Member, Advisory Committee for IDM2010 - Identification of Dark Matter 2010
Montpelier, France, July 2010
33. Member, Advisory Committee for 12th International Conference on Topics in Astroparticle and Underground Physics, TAUP 2011
Munich, Germany, Sept. 2011
34. International organizer, "Dark Matter and New Physics", Kavli Institute for Theoretical Physics China (KITPC); also DSU 2011
Beijing, China, Sept. - Nov. 2011.
35. Member, International Organizing Committee, 10 th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe in Marina del Rey, CA, Feb. 2012
36. Member, Advisory Committee for Silver Jubilee of Dark Matter Direct Detection Conference at PNNL, Richland, WA, June 2012
37. Member, Advisory Committee for IDM2012, 'Identification of dark matter', in Chicago in July 2012.
38. Organizer with Dragan Huterer, Cosmology after Planck Workshop, MCTP, Ann Arbor, MI, October 2013
39. Member, International Organizing Committee, 11th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe, UCLA, CA, Feb. 2014
40. Member, International Organizing Committee, COSMO 2014, University of Chicago, August 2014

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
36. Cosmology, Fall 2011
37. Cosmology, winter 2013
38. Nuclear Physics, Particle Physics and Cosmology for seniors, fall 2014

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. with tenure at Barnard/Columbia University.
2. My graduate student, Jay Jubas, received his PhD in Physics from MIT in 1994. He moved to Lincoln Labs at MIT and is currently Senior Partner at McKinsey & Company.
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 with tenure 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, followed by a fellowship at the Oskar Klein Center for Cosmo Particle Physics in Stockholm Sweden, and now a postdoctoral position at the Univ. of Utah.
13. Former postdoc Kenji Kadota is Assistant Professor at the University of Nagoya.
14. Former student Douglas Spolyar had a postdoctoral fellowship with the Fermilab Astrophysics Theory Group. He is now at Institut d'Astrophysique in Paris.
15. Former student Cosmin Ilie has a postdoctoral position with the new NASA center at North Carolina Central University
16. Currently I am working with graduate student Alejandro Lopez and postdoctoral fellows Nausheen Shah and Tanja Rindler-Daller.

University Service:

2013-: Life After Graduate School Seminar Committee
 2013-: Faculty advisor to the Society for Women in Physics (SWIP)
 2013-: Ta-You Wu /Ford Foundation/Baer Lectures
 2011-: Faculty Awards Committee
 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 graduate students in physics
 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, Audio and Video

1. "Skeptics Society with Michael Shermer"
Caltech, Pasadena, CA, Sept 7, 2014.
2. "The Cosmic Cocktail" with Katherine Freese
Houston Museum of Natural History, Houston, TX, Sept 3, 2014.
3. Café Scientifique
Carnegie Science Center, Pittsburgh, PA, Sept 1, 2014.
4. AJC Decatur Book Festival
Decatur, GA, August 29-31.
5. Science And Story Café: Meet The Authors
World Science Festival, May 31, 2014.
6. "The Cosmic Cocktail" with Katherine Freese
Town Hall in Seattle, WA, May 20, 2014.
7. "The Cosmic Cocktail" with Katherine Freese,
Adler Planetarium in Chicago, IL, May 15, 2014.
8. Speaker at "Space, STEM & The Stars"
Dearborn, MI, May 13, 2014.
9. Frontiers Lecture: The Cosmic Cocktail with Katherine Freese
Hayden Planetarium in New York, NY, May 12, 2014.

10. Physicist Katherine Freese presents “The Cosmic Cocktail”
Spectrum in New York, NY, May 11, 2014.
11. Matter as You Have Never Seen It: Mick Rossi’s Anti-Matter with a Touch of Dark Matter
Spectrum in New York, NY, May 9, 2014.
12. “The Cosmic Cocktail” with Katherine Freese
California Academy of Sciences in San Francisco, CA May 5, 2014.
13. Through the Wormhole with Morgan Freeman on the Science Channel,
Season 5, Episode: “Is There a Shadow Universe?” Aired July 2014.
14. Through the Wormhole with Morgan Freeman on the Science Channel,
Season 3, Episode: “Is Nothing really Something?” Aired July 2012.
15. World of Science Festival, NY, NY, June 2011
Panel on “The Mystery of Dark Matter”
Moderator: David Kestenbaum
Panelists: Katherine Freese, Elena Aprile, Glennys Farrar, Tali Figueroa, Jocelyn Monroe,
and Priyamvada Natarajan
16. World of Science Festival, NY, NY, June 2011
Panel on “The Dark Side of the Universe”
Moderator: John Hockenberry
Panelists: Katherine Freese, Elena Aprile, Glennys Farrar, Michael Turner, Saul Perlmutter,
and Brian Greene
17. Isaac Asimov Memorial Debate on “The Theory of Everything”
Hayden Planetarium
Moderator Neal deGrasse Tyson
Participants: Katherine Freese, Brian Greene, Janna Levin, and James Gates
The Museum for Natural History, NY, NY, March 2011
18. Big Think Interview
NY, NY, March 2010
<http://bigthink.com/katiefreese>
19. Quantum to Cosmos, member of two panels on TVO (TV Ontario)
Perimeter Institute, Waterloo, CA, October 2009
<http://www.youtube.com/watch?v=0bcY5g1m26M>
20. Quirks and Quarks, Canadian Broadcast Company Radio Show
Toronto, CA, October 2009
21. 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.
22. “Origins: the University, Earth, and Life” Symposium
Ann Arbor, MI, January 2006
“From the Big Bang through the First Million Years”
23. 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
24. University Commons Public Lecture
Ann Arbor, MI, March 2004
“Dark Matter and Dark Energy in the Universe

25. Radio: BBC World Service, 2004
I was interviewed about my work on dark matter and the Sagittarius stream
Contact person: Roland Pease roland.pease@bbc.co.uk
26. Saturday Morning Physics Lectures (two lectures)
University of Michigan, April 2003
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27. Panel on Cosmology with Drs. Ed Witten, David Spergel, Dan Eisenstein, and Eric Wilcots
Princeton University, June 2002
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