Curriculum Vitae – Madappa Prakash

Birth: Mysore, India, Dec 28, 1953

Citizenship: USA

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Education:

Ph.D.	University of Bombay, India	1979
M.Sc	University of Mysore, India	1973
B.Sc	University of Mysore, India	1971

Academic Positions:

Professor	Ohio University Athens, OH–45701	2005 –
Research Professor & Principal Research Scientist	SUNY at Stony Brook Stony Brook, NY–11794	1998 – 2005
Senior Research Scientist	SUNY at Stony Brook	1992 – 1998
Research Assistant Professor	SUNY at Stony Brook	1987 – 1992
Postdoctoral Research Associate	SUNY at Stony Brook	1982 – 1986
Postdoctoral Research Fellow	The Niels Bohr Institute Copenhagen, Denmark	1979 – 1981
Scientific Officer	Bhabha Atomic Research Centre Bombay, India	1974 – 1981

Honors:

Ohio University's Honors Tutorial College
Distinguished Mentor Award 2008
Fellow of the American Physical Society 2001
The Niels Bohr Institute Fellowship 1979–1981
The Government of India National Merit Scholarship 1963–1973

Grants: Current: 1 Pending: 0

U.S. Department of Energy
"Nuclear Dynamics & Astrophysics in Few & Many-Body Systems"
C. Elster (PI), D. Phillips (Co-PI) & M. Prakash (Co-PI)
Grant amount: 11/13 - 10/16, $1,110,000
Grant amount: 11/10 - 10/13, $1,072,000
Grant amount: 11/07 - 10/10, $1,110,000

Principal Research Areas: Nuclear & Particle Astrophysics; Strong Interaction Physics

Publications:
Refereed Journals: 112 Conferences: 99
Review Articles: 12 Lecture Notes: 4
Monographs: 7 Courses in schools/workshops: 7
Book in Preparation: 1 Papers (Reviews) in Preparation: 3 (1)
White Paper: 1

Media Coverage of Publications: 2

Invited Seminars & Colloquia: 35 (since 2000)

International Conferences/Workshops: Total: 106 since 2000

Campus-Wide Seminars & Outreach Articles: 10 & 2

Higher Degree Supervision: Ph.D: 14 (Astrophysics - 10; RHIC Physics - 4); M.S.: 3 (Astrophysics - 3)
Current Ph.D: 3 (Astrophysics - 3; RHIC Physics - 0)

Undergraduate Honors Thesis Supervision: 3

Teaching: Undergraduate: 37 courses from 1982 through 2015
Graduate & Advanced: 34 courses from 1986 through 2016

International Schools: Astrophysics: 6 RHIC physics: 1

Teaching Initiatives: Undergraduate: 1 course in Computational Physics
2 courses in Astrophysics Research
Graduate: 2 courses in Computational Physics

Undergraduate Research Initiatives: 27 students from 1994 through 2016

Research with High School Students: 12 students from 2001 through 2015

Advisee Awards:
5 High School Intel Science Talent Search Semifinalists (2001,'02, 04)
6 Undergraduate Recognition Awards for Excellence and Outstanding Achievement (1996, 1999, 2001, '03, '04)
1 President's Award for Distinguished Doctoral Research (1998)
2 Max Dresden's Prize for Best Thesis in Theoretical Physics (2002,2005)
1 APS Division of Nuclear Physics Dissertation Award (2004)

Professional Societies:
The American Physical Society
The American Astronomical Society

Multi-Institution Collaborations:

DOE funded Topical Collaboration (2011-2015):
"Neutrinos and Nucleosynthesis in Hot and Dense Matter"

NSF funded Collaboration (2000 - Present):
"Joint Institute for Nuclear Astrophysics (JINA)"

Professional Activities: Reviewer for NASA, NSF, DOE & Reserach Corporation Proposals,
Reviewer for Proposals from Canada, Netherlands, Germany & India
Astrophysical Journal, Astrophyscial Journal Letters,
Astronomy & Astrophysics, MNRAS
Science, Nature, Pramana
Physical Review Letters, Physical Review C & D,
Physics Reports, Physics Letters B, Nuclear Physics A & B,
Journal of Physics G, Journal of Modern Physics A & E
etc.,

School, Workshop & Conference Organization:

Town Hall Meeting at Notre-Dame (Co-Convener)
Opportunities in Nuclear Astrophysics
June 7-8, 1999, Notre-Dame, Indiana

XXIII School of Theoretical Physics (Int. Organizing Committee)
Recent Developments in the Theory of Fundamental Interactions
Sep 15-22, 1999, Ustron, Poland

XXIII Gordon Conference in Chemistry (Co-Chair)
Flavor Dynamics Across Energies
June 13-18, 2004, Colby Sawyer College, New Hampshire

5 week program on "Neutron Star Crust and Surface" (Co-Organizer)
Institute for Nuclear Theory at the Univ. of Washington
June 18-July 20, 2008, Seattle, WA

1 week workshop on "The Neutron Star Crust and Surface:
Observations and Models (Co-Organizer)
Institute of Nuclear Theory at the Univ. of Washington
June 25 - June 29, 2008, Seattle, WA

Session on "Neutron Stars and Dense Matter" (Organizer))
Town Meeting on Opportunities in Nuclear Astrophysics
for Joint Institute for Nuclear Astrophysics
Oct 9-11, 2012 , Detroit, MI

International Symposium on
"Neutron Stars in the Multi-Messenger Era:
Prospects and Challenges" (Lead Organizer),
May 23-26, 2016, Athens, OH

Satellite Workshop on
"Experiments with Radioactive Ion Beams for X-Ray Bursts"
(Co-Organizer),
May 22, 2016, Athens, OH

Overview of Research Interests

Astrophysics:	Equation of state of stellar (supernova and neutron star) matter
	Neutron stars: Composition, structure and evolution
	Rotational properties
	Short and long term cooling of neutron stars
	Multi-wavelength observations of neutron stars
	Superfluidity in dense matter
	Inferences from experimental constraints
	Neutrino interactions in hot and dense matter
	Neutrino signals from stars and supernovae
	Relic neutrinos and Cosmology
	X-ray and gamma-ray bursters
	Binary star mergers – Gravity wave detections
	Intense magnetic fields in the universe:
	Applications to neutron stars, supernovae, and binary mergers
Strong Interaction Physics:	QCD at high temperature and high density
	QCD sum rules
	Nuclear processes in relation to QCD
	Transparency in nuclear exclusive processes
	Effective field theories of hadrons
	Many–body theories for hadronic matter
	Possible pion, kaon and quark–hadron phase transitions
	Experimental consequences and signatures
	Inferences from nuclear collisions
Nuclear Theory:	Nuclear properties in their ground & excited states
	Nuclei far off stability
	Nuclei under extreme conditions of rotation and entropy
	Large amplitude collective phenomena
Heavy–Ion Collisions (RHIC):	Theoretical framework to describe RHIC

Consequences of deconfinement and/or chiral phase transitions
Statistical mechanics of hadrons, quarks and gluons
Equation of state and transport properties
Spacetime simulations: Hydrodynamics and sequential scattering
Diagnostics of dynamics: Hadrons and electromagnetic probes

Journal Publications

Ph.D. dissertation: "Studies in the Statistical Theory of Nuclear Fission"
(University of Bombay, 1979)

1. "On the uncertainties in the shell correction by the Strutinsky smearing procedure for certain shapes relevant in fission,"
by V. S. Ramamurthy, **M. Prakash** and S. S. Kapoor,
Phys. Lett. **62B** (1976) 124-126.

2. "Transmission through an inverted bi–harmonic oscillator,"
by **M. Prakash**,
J. Phys. **A9** (1976) 1847-1850.

3. "Quantitative resolution of Thorium anomaly,"
by **M. Prakash** and B. S. Bhandari,
Phys. Rev. **C18** (1978) 1531-1533.

4. "Transmission through bi–harmonic oscillator potentials: Application to double humped fission barrier,"
by **M. Prakash**,
J. Phys. **G4** (1978) 1455-1462.

5. "Calculation of overlap integrals between two arbitrarily shaped nuclei in the diffuse surface model,"
by **M. Prakash**,
Phys. Rev. **C18** (1978) 2805-2809.

6. "Frictional effects on post–scission dynamics and fission fragment kinetic energies,"
by M. Prakash, V. S. Ramamurthy, S. K. Kataria and S. S. Kapoor,
Phys. Lett. **81B** (1979) 136-139.

7. "Magnitude of energy dissipation in fission,"
by V. S. Ramamurthy, **M. Prakash** and S. S. Kapoor,
Phys. Rev. **C21** (1980) 752-754.

8. "Phase space distribution of an N–dimensional harmonic oscillator,"
by S. Shlomo and **M. Prakash**,
Nucl. Phys. **A357** (1981) 157-170.

9. "Microscopic calculation of mass transport coefficients in heavy–ion collisions,"
M. Prakash, S. Shlomo, V. S. Ramamurthy, S. S. Kapoor and S. K. Kataria,
Phys. Lett. **98B** (1981) 413-417.

10. "A microscopic dynamical calculation of nucleon flow in heavy–ion reactions,"
by **M. Prakash**, S. Shlomo, B. S. Nilsson, J. P. Bondorf and F. E. Serr,
Phys. Rev. Lett. **47** (1981) 898-902.

11. "Shell and surface effects in the static Wigner phase space distribution of nuclei,"
by **M. Prakash**, S. Shlomo and V. M. Kolomietz,
Nucl. Phys. **A370** (1981) 30-46.

12. "Pre–equilibrium emission of particles in TDHF calculations of O + Nb collisions,"
by A. K. Dhar, **M. Prakash**, K. T. R. Davies, J. P. Bondorf, B. S. Nilsson and S. Shlomo,
Phys. Rev. **C25** (1982) 1432-1435.

13. "Matter, momentum and energy flow in heavy–ion collisions,"
by **M. Prakash**, S. Shlomo, B. S. Nilsson, J. P. Bondorf and F. E. Serr,
Nucl. Phys. **A385** (1982) 483-504.

14. "Nonlinear response and collective movement in nuclei with big amplitudes in the dependence of time dependent Hartree-Fock approximation,"
by V.M. Kolomiets, B. Nilsson, and **M. Prakash**,
Izvestiya Akademii Nauk SSSR Seriya Fizicheskaya **47** (1983) 73-79.

15. "Effective mass in nuclei and the level density parameter,"
by **M. Prakash**, J. Wambach and Z. Ma,
Phys. Lett. **128B** (1983) 141-146.

16. "Oscillating structure of the harmonic oscillator Wigner function,"
by N. Rowley and **M. Prakash**,
J. Phys. A: Math. Gen. **16** (1983) 3219-3236.

17. "Transition state theory for fission fragment angular distributions: A flexible rotor model,"
by **M. Prakash**, V. S. Ramamurthy, S. S. Kapoor and J. M. Alexander,
Phys. Rev. Lett. **52** (1984) 990-993.

18. "Simultaneous description of quasielastic and fusion reactions in low energy heavy–ion collisions,"
by M. J. Rhoades–Brown and **M. Prakash**,
Phys. Rev. Lett. **53** (1984) 333-336.

19. "Surface and curvature properties of neutron–rich nuclei,"
by K. Kolehmainen, **M. Prakash** J. M. Lattimer and J. Treiner,
Nucl. Phys. **A439** (1985) 535-572.

20. "Incompressibility of neutron–rich nuclear matter,"
by **M. Prakash** and K. S. Bedell,
Phys. Rev. Rapid Communications **C32** (1985) 1118-1121.

21. "Pion production in heavy ion collisions near absolute thresholds,"
by **M. Prakash**, P. Braun–Munzinger and J. Stachel,
Phys. Rev. **C33** (1986) 937-942.

22. "Equation of state of dense nuclear matter,"
by T. L. Ainsworth, E. Baron, G. E. Brown, J. Cooperstein and **M. Prakash**,
Nucl. Phys. **A464** (1987) 740-768.

23. "Thermodynamics of quarks and gluons in a slab,"
by A. Jackson, Su Lee, **M. Prakash** and T. H. Hansson,
Phys. Lett. **B182** (1987) 226-232.

24. "Sigma model calculations of neutron–rich nuclear matter,"
by **M. Prakash** and T. L. Ainsworth,
Phys. Rev. **C36** (1987) 346-353.

25. "The nuclear symmetry energy in relativistic Brueckner–Hartree–Fock calculations,"
by H. Müther, **M. Prakash** and T. L. Ainsworth,
Phys. Lett. **199B** (1987) 469-474.

26. "Loop corrections and other many–body effects in relativistic mean field theories,"
by T. L. Ainsworth, G. E. Brown, **M. Prakash** and W. Weise,
Phys. Lett. **200B** (1987) 413-418.

27. "Momentum dependence, BUU calculations and transverse momenta,"
by **M. Prakash**, T. T. S. Kuo and S. Das Gupta,
Phys. Rev. **C37** (1988) 2253-2256.

28. "Detailed balance description of energetic photons in heavy ion collisions,"
by **M. Prakash**, P. Braun–Munzinger, J. Stachel and N. Alamanos,
Phys. Rev. **C37** (1988) 1959-1967.

29. "J/Psi interactions with hot hadronic matter,"
by R. Vogt, **M. Prakash**, P. Koch and T. H. Hansson,
Phys. Lett. **B207** (1988) 263-268.

30. "Azimuthal distributions in heavy ion collisions and the nuclear equation of state,"
by G. M. Welke, **M. Prakash**, T. T. S. Kuo, S. Das Gupta and C. Gale,
Phys. Rev **C38** (1988) 2101-2107.

31. "Simple models for transverse energy production in high energy proton–nucleus collisions,"
by **M. Prakash**, S. Das Gupta and A. D. Jackson,
Nucl. Phys. **A489** (1988) 716-730.

32. "Equation of state and the maximum mass of neutron stars,"
by **M. Prakash**, T. L. Ainsworth and J. M. Lattimer,
Phys. Rev. Lett. **61** (1988) 2518-2521.

33. "Charmonium disintegration by field–ionization,"
by C. Adami, **M. Prakash** and I. Zahed,
Phys. Lett. **217B** (1989) 5-8.

34. "Parity doubling of the nucleon and a first order chiral phase transition,"
by T. Hatsuda and **M. Prakash**,
Phys. Lett. **224B** (1989) 11-15.

35. "Collisional relaxation in simulations of heavy–ion collisions using Boltzmann–like equations,"
by G. M. Welke, R. Malfliet, C. Gregoire, **M. Prakash** and E. Suraud,
Phys. Rev. **C40** (1989) 2611-2620.

36. "The Nambu Jona–Lasinio model in light of chiral perturbation theory,"
by T. H. Hansson, **M. Prakash** and I. Zahed,
Nucl. Phys. **B335** (1990) 67-76.

37. "Effect of chiral constraints on dense nuclear matter,"
by G. E. Brown, H. Muether and **M. Prakash**,
Nucl. Phys. **A506** (1990) 565-585.

38. "Transverse momenta, nuclear equation of state and momentum dependent interactions in heavy–ion collisions,"
by C. Gale, G. M. Welke, **M. Prakash**, S. J. Lee and S. Das Gupta,
Phys. Rev. **C41** (1990) 1545-1552.

39. "Flow effects on transverse momentum spectra in ultra–relativistic heavy–ion collisions,"
by Raju Venugopalan and **M. Prakash**
Phys. Rev. **C41** (1990) 221-225.

40. "Rapidly rotating pulsars and the equation of state,"
by J. M. Lattimer, **M. Prakash**, D. Masak and A. Yahil,
Astro. Phys. Jl. **355** (1990) 241-254.

41. "Rotation of stars containing strange matter,"
by Manju Prakash, E. Baron and **M. Prakash**,
Phys. Lett. **B243** (1990) 175-180.

42. "The speed of sound in an interacting pion gas,"
by G. M. Welke, Raju Venugopalan and **M. Prakash**,
Phys. Lett. **B245** (1990) 137-141.

43. "Neutron–proton mass difference in nuclei and the Okamoto–Nolan–Schiffer anomaly,"
by T. Hatsuda, H. Hogaasen and **M. Prakash**,
Phys. Rev. **C42** (1990) 2212-2221.

44. "QCD sum rules and the Okamoto–Nolan–Schiffer anomaly,"
by T. Hatsuda, H. Hogaasen and **M. Prakash**,
Phys. Rev. Lett. **66** (1991) 2851-2854.

45. "The direct Urca process in neutron stars,"
by J. M. Lattimer, C. J. Pethick, **M. Prakash** and P. Haensel,
Phys. Rev. Lett. **66** (1991) 2701-2704.

46. "Quantum mechanics of color transparency,"
by J. P. Blaizot, Raju Venugopalan and **M. Prakash**,
Phys. Rev. **D45** (1991) 814-820.

47. "Relativistic nuclear matter with composite nucleons,"
by **M. Prakash**, P. J. Ellis and J. I. Kapusta,
Phys. Rev. **C45** (1992) 2518-2521.

48. "Rapid cooling of neutron stars by hyperons and delta isobars,"
by **M. Prakash**, Manju Prakash, J. M. Lattimer and C. J. Pethick,
Astro. Phys. Jl. Lett. **390** (1992) L77-L80.

49. "Thermal properties of interacting hadrons,"
by Raju Venugopalan and **M. Prakash**,
Nucl. Phys. **A546** (1992) 718-760.

50. "Anharmonicity of the nuclear matter ground state,"
by S. Rudaz, P. J. Ellis, E. K. Heide and **M. Prakash**,
Phys. Lett. **285B** (1992) 183-186.

51. "QCD_2 in the semiclassical approximation,"
by **M. Prakash**, Manju Prakash and I. Zahed,
Ann. Phys. **221** (1992) 71-76.

52. "Quark susceptibility in hot QCD,"
by **M. Prakash** and I. Zahed,
Phys. Rev. Lett. **69** (1992) 3282-3285.

53. "How fast is equilibration in hot hadronic matter,"
by **M. Prakash**, Manju Prakash, Raju Venugopalan and G. M. Welke,
Phys. Rev. Lett. **70** (1993) 1228-1231.

54. "Rapid cooling and the structure of neutron stars,"
by J. M. Lattimer, K. A. Van Riper, **M. Prakash** and Manju Prakash,
Astrophys. Jl, **425** (1993) 802-813.

55. "Nuclei and neutron stars in the relativistic modified Hartree approximation,"
by **M. Prakash**, P. J. Ellis, E. K. Heide and S. Rudaz,
Nucl. Phys **A575** (1994) 583-604.

56. "Composition, structure and evolution of neutron stars with kaon condensates,"
by V. Thorsson, **M. Prakash** and J. M. Lattimer,
Nucl. Phys. **A 572** (1994) 693-731.

57. "Three–particle interactions in a quark–gluon plasma,"
by P. Lichard and **M. Prakash**,
Czechoslovak Jl. of Phys. **45** (1995) 465-475.

58. "Kaon condensation in neutron star matter with hyperons,"
by P. J. Ellis, R. Knorren and **M. Prakash**,
Phys. Lett. **B349** (1995) 11-17.

59. "The quark-hadron phase transition in protoneutron stars,"
by **M. Prakash**, J. R. Cooke, and J. M. Lattimer,
Phys. Rev. **D 52**, (1995) 661-665.

60. "Neutrino emission from dense matter containing meson condensates,"
by V. Thorsson, **M. Prakash**, T. Tatsumi and C. J. Pethick,
Phys. Rev. **D52** (1995) 3739-3741.

61. "Strangeness in hadronic stellar matter,"
by R. Knorren and **M. Prakash** and P. J. Ellis,
Phys. Rev. **C52** (1995) 3470-3482.

62. "Role of hyperon negative energy sea in nuclear matter,"
by P. J. Ellis, S. B. Parendo and **M. Prakash**,
Phys. Lett. **B361** (1995) 5-9.

63. "Strangeness and Metastable Neutron Stars:
What might have Happened to Supernova SN 1987A,"
by P. J. Ellis, J. M. Lattimer and **M. Prakash**,
Comments in Nuclear and Particle Physics, **22** (1996) 63-75.

64. "Hydrodynamical Description of 200 A GeV/c S+Au Collisions:
Hadron and Electromagnetic Spectra,"
by J. Sollfrank, P. Huovinen, M. Kataja, P.V. Ruuskanen, **M. Prakash**, and R. Venugopalan,
Phys. Rev. **C55** (1996) 392-410.

65. "Neutrino scattering in a newly-born neutron star,"
by S. Reddy and **M. Prakash**,
Astrophys. Jl. **478** (1997) 689-700.

66. "Neutrino Interactions in Hot and Dense Matter,"
by S. Reddy, M. Prakash and J. M. Lattimer,
Phys. Rev. **D58** (1998) 013009 (27 pages).

67. "Evolution of Protoneutron Stars,"
by J. Pons, S. Reddy, **M. Prakash**, J. M. Lattimer and J. A. Miralles,
Astrophys. Jl. **513** (1999) 780-804.

68. "Effects of Strong and Electromagnetic Correlations on Neutrino Interactions in Dense Matter,"
S. Reddy, **M. Prakash**, & J. M. Lattimer
Phys. Rev. **C59** (1999) 2888-2918.

69. "e^+e^-emission from 158A GeV/c Pb+Au collisions: An Assessment of Baryonic contributions,"
P. Huovinen & **M. Prakash**,
Phys. Lett. **B450** (1999) 15-23.

70. "Hadrons and QCD Instantons: A Bosonized View"
M. Kacir, **M. Prakash**, and I. Zahed,
Acta Physica Polonica **30** (1999) 287-348.

71. "The Equation of State of Neutron-Star Matter in Strong Magnetic Fields"
A. Broderick, **M. Prakash** & J.M. Lattimer,
Astrophys. Jl. **537** (2000) 351-367.

72. "First Order Phase Transitions in Neutron Star Matter:
Droplets and Coherent Neutrino Scattering"
S. Reddy, G. Bertsch, and **M. Prakash**,
Phys. Lett. **B475** (2000) 1-8.

73. "Kaon Condensation in Proto-Neutron Star Matter"
J. A. Pons, S. Reddy, P.J. Ellis, **M. Prakash** & J.M. Lattimer
Phys. Rev. **C62** (2000) 035803.

74. "Quark-Hadron Phase Transitions in Young and Old Neutron Stars"
A. Steiner, **M. Prakash** & J.M. Lattimer,
Phys. Lett. **B486** (2000) 239-248.

75. "Prospects of Detecting Baryon and Quark Superfluidity from Cooling Neutron Stars,"
D. Page, **M. Prakash**, J.M. Lattimer, and A. W. Steiner,
Phys. Rev. Lett. **85** (2000) 2048-2051.

76. "Neutron Star Structure and The Equation of State,"
by J.M. Lattimer & **M. Prakash**
Astrophys. Jl. **550** (2001) 426-442.

77. "Evolution of Proto-Neutron Stars with Kaon Condensates"
J. A. Pons, J. A. Miralles, **M. Prakash** & J.M. Lattimer,
Astrophys. Jl. **553** (2001) 382-393.

78. "Effects of Strong Magnetic Fields on Neutron Star Structure"
C. Cardall, **M. Prakash** & J.M. Lattimer,
Astrophys. Jl. **554** (2001) 322.

79. "Diffusion of Neutrinos in Proto-Neutron Star Matter with Quarks"
A.W. Steiner, **M. Prakash** & J.M. Lattimer,
Phys. Lett. B **509** (2001) 10-18.

80. "Evolution of Proto-Neutron Stars with Quarks"
J.A. Pons, A.W. Steiner, M. Prakash & J.M. Lattimer,
Phys. Rev. Lett. **86** (2001) 5223-5226, [astro-ph/0102015],
Phys. Rev. Focus, June 1, 2001; [http://focus.aps.org/v7/st26.html].

81. "Towards a Mass and Radius Determination of the Nearby Isolated Neutron Star RX J185635-3754,"
by J.A. Pons, F.M. Walter, J. M. Lattimer, **M. Prakash**, R. Neuhauser, and P. An,
Astrophys. Jl. **564** (2002) 981-1006; [astro-ph/0107404].

82. "Neutrino Pair Emission from Cooper Pair Breaking and Recombination in Superfluid Quark Matter,"
by P. Jaikumar and **M. Prakash**
Phys. Lett. **516/3-4** (2001) 345-352; [astro-ph/0105225].

83. "The Quenching of the Axial Coupling in Nuclear and Neutron-Star Matter,"
by G. Carter and **M. Prakash**,
Phys. Lett. **B525** (2002) 249-254; [nucl-th/0106029].

84. "Isospin Fluctuations in QCD and Relativistic Heavy-Ion Collisions,"
M. Prakash, R. Rapp, J. Wambach and I. Zahed,
Phys. Rev. D **65** (2002) 034906; [hep-ph/0110070].

85. "Effects of Strong Magnetic Fields in Strange Baryonic Matter,"
A. Broderick, **M. Prakash,** and J.M. Lattimer,
Phys. Lett. **B531** (2002) 167-174; [astro-ph/0111516].

86. "Neutrino Emission from Goldstone Modes in Dense Quark Matter,"
P. Jaikumar, **M. Prakash**, and T. Schaffer,
Phys. Rev. **D66** (2002) 063003; [hep-ph/0203088].

87. "Color-Neutral Superconducting Quark Matter,"
A.W. Steiner, S. Reddy, and **M. Prakash**,
Phys. Rev. **D66** (2002) 094007, [hep-ph/0204199].

88. "Spectroscopy of Resonance Decays in RHIC Experiments,"
P. F. Kolb and **M. Prakash**,
Phys. Rev. **C67** (2003) 044902, [nucl-th/0301007].

89. "Differential Neutrino Rates and Emissivities from the Plasma Process in Astrophysical Systems,"
Sasa Ratkovic, Sharada Iyer Dutta, and **M. Prakash**,
Phys. Rev. **D67** (2003) 123002, [astro-th/0303501].

90. "The Photo-Neutrino Process in Astrophysical Systems,"
Sharada Iyer Dutta, Sasa Ratkovic, and **M. Prakash**,
Phys. Rev. **D69** (2004) 023005, [astro-ph/0309564].

91. "Bremsstrahlung Photons from the Bare Surface of a Strange Quark Star,"
P. Jaikumar, C. Gale, D. Page, and **M. Prakash**,
Phys. Rev. **D70** (2004) 023004, [astro-ph/0403427].

92. "Minimal Cooling of Neutron Stars: A New Paradigm,"
D. Page, J.M. Lattimer, **M. Prakash**, and Andrew Steiner,
Astrophys. Jl. Supplement **155** (2004) 623-650 [astro-ph/0403657].

93. "Ultimate Energy Density of Observable Cold Matter,"
J. M. Lattimer and **M. Prakash**,
Phys. Rev. Lett. **94** (2005) 111101, [astro-ph/0411280].

94. "Roche Lobes in the Second Post-Newtonian Approximation,"
S. Ratkovic, **M. Prakash**, and J. M. Lattimer, [astro-ph/0512133]

95. "The Role of the Equation of State in Binary Mergers,"
S. Ratkovic, **M. Prakash**, and J. M. Lattimer, [astro-ph/0512136]

96. "Muon Production in Low-Energy Electron-Nucleon and Electron-Nucleus Scattering"
P. Jaikumar, D. R. Phillips, L. Platter, and **M. Prakash**
Phys. Rev. D **76** (2007) 115001; [arXiv:0707.3145]

97. "Shear viscosity of the outer crust of neutron stars: Ion contribution",
O.L. Caballero, S. Postnikov, C.J. Horowitz, and **M. Prakash**
Phys. Rev. **C78** (2008) 045805; [arXiv: 0907.4353]

98. "Transport Properties of a Delta-Shell Gas with Long Scattering Lengths",
S. Postnikov and **M. Prakash**; [arXiv: 0902.2384]

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3. "Rapid cooling of neutron stars,"
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4. "Composition and structure of proto–neutron stars,"
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7. "The Physics of Neutron Stars"
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9. "Neutron Star Observations: Prognosis for Equation of State Constraints,"
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    M. Prakash,
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12. "The equation of state of hot, dense matter and neutron stars",
    J. M. Lattimer and **M. Prakash**,
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13. White Paper on Nuclear Astrophysics, Progress in Particle and Nuclear Physics,
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   by **M. Prakash**,
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   Mexico. (4 hours)
   Published in "Nuclear and Particle Astrophysics," eds. J.G. Hirsch & D. Page, (Cambridge Contemporary Astrophysics), 153-211.

2. "Evolution of a Neutron Star from its Birth to Old Age"
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6. "Stellar Superfluids",
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by **M. Prakash**,
Lecture Notes of the workshop on the *The Nuclear Equation of State*, Jan 4 – 14, 1994, Puri, India. (15 lectures)
A. Ansari and L. Satpathy (eds), (World Scientific, 1996) pp: 229-410.

2. "Introduction to the physics of high energy heavy-ion collisions,"
   by **M. Prakash**,
   in the Nordic School on *Heavy-Ion Physics*, Aug 14 – 18, (1995), Jyvaskula, Finland. (25 hours)

3. "Neutron stars,"
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4. "Neutrino Interactions in Dense Matter,"
   in XXIII School of Theoretical Physics, Recent Developments in Theory of Fundamental Interactions," Sep 15-22, 1999, Ustron, Poland,
   Acta Physica Polonica, **B30** (1999) 3187-3209.

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6. "The Physics and Astrophysics of Neutron Stars,"
   by **M. Prakash** in National Nuclear Physics Summer School,"
   Bloomington, Indiana, July 23rd - Aug 5th 2006,
   5 Lectures.

7. "Neutron Stars I & II,"
   by **M. Prakash** in "Medium Properties, Chiral Symmetry and Astrophysical Phenomena,"
   Second School of Collective Dynamics in High-Energy Collisions,
   Berkeley, California, May 21-25, 2007, 2 Lectures

Book

1. "The Physics of Dense Matter: From Nuclei to Neutron Stars"
   by **M. Prakash** and J. M. Lattimer,
   Cambridge University Press, (In preparation).

Invited Talks and Contributions to Conferences/Workshops

1. "Studies in the statistical theory of nuclear fission and explanation of fragment mass asymmetry in terms of nucleon exchange mechanism,"
   by **M. Prakash**, V. S. Ramamurthy and S. S. Kapoor,
   in *Physics and Chemistry of Fission* (Proc. 5th Int. Symp., Julich, 1979) Vol. 2, IAEA, Vienna (1979) 353-371.

2. "Shell and surface effects in the static Wigner phase space distribution of nuclei,"
by **M. Prakash**, S. S. Shlomo and V. M. Kolomietz,
Workshop in Semiclassical Methods in Nuclear Physics, I. L. L. March 18–20, 1981, Grenoble, France, (talk).

3. "Matter, momentum and energy flow in heavy–ion collisions,"
by **M. Prakash**, S. Shlomo, B. S. Nilsson, J. P. Bondorf and F. E. Serr,
in *Time Dependent Hartree–Fock and Beyond*, Proc. Bad Honnef, Germany 1982, Springer–Verlag, vol. 171, 74-86, (talk).

4. "What degrees of freedom control nuclear fusion at energies below the barrier,"
by L. C. Vaz, J. M. Alexander, **M. Prakash** and S. Y. Lee,
in Proc. of the Int. Conf. on Nuclear Physics with Heavy Ions, Stony Brook, N.Y., April, 1983; Vol. VI Nuclear Science Research Conference Series (Harwood Academic Publisher, Amsterdam), pg: 31-55.

5. "Knock–out model for subthreshold pion production,"
by C. Guet and **M. Prakash**,
in Proc. of Int. Conf. on Theoretical Approaches to Heavy–Ion Reactions, Paris, May, 1984, *Nucl. Phys.* **A428** (1984) 119c-136c.

6. "The coupled channel approach to subbarier fusion reactions,"
by M. J. Rhoades–Brown, P. Braun–Munzinger, **M. Prakash** and S. Sen,
in *Fusion Reactions Below the Coulomb Barrier*, Proc., Cambridge, MA 1984, Lecture Notes in Physics, Springer–Verlag, vol. 219, pg: 162-177.

7. "Pion production in peripheral nucleus–nucleus collisions,"
by **M. Prakash**, C. Guet and G. E. Brown,
in Proc. 2nd Int. Conf. on Nucleus–Nucleus Collisions, Visby, Sweden, 1985, *Nucl. Phys.* **A447** (1986) 625c-633c, (talk).

8. "From the symmetric to the neutron matter equation of state,"
by **M. Prakash**,
Workshop on the Nuclear Matter Equation of State, LBL, Berkeley, CA, April 21–23, 1986, (talk).

9. "Features of hot dense nuclear matter,"
by **M. Prakash**, T. L. Ainsworth, J. P. Blaizot and H. Wolter,
in *Windsurfing the Fermi Sea*, Proc. Int. Conf. and Symp. on Unified Concepts in Many Body Problems, Stony Brook, NY, Sept. 4–6, 1986, (talk), pp. 357–381.

10. "Momentum and temperature dependence of the equation of state in heavy–ion collisions,"
by T. L. Ainsworth, G. E. Brown, **M. Prakash** and H. Wolter,
in XV Int. Workshop on Gross Properties of Nuclei and Nuclear Excitations, Hirschegg, Austria, Jan. 12–17, 1987.

11. "Photon production in heavy–ion collisions,"
by **M. Prakash**,
in Fourth Gull Lake Nuclear Physics Conference, Gull Lake, MI, May 17–20, 1987, (talk).

12. "Strangeness and chiral symmetry,"
by G. E. Brown, K. Kubodera, **M. Prakash** and M. Rho,
Proc. Int. Symp. on Strangeness in Hadronic Matter, Bad Honnef, June 1–5, 1987, *Nucl. Phys.* **A479** (1988) 175c-194c.

13. "Constraints on properties of dense nuclear matter,"
by **M. Prakash**,
Gordon Research Conference on Nuclear Physics, July 4–8, 1988, Tilton, NH, (talk).

14. "Charmonium disintegration by field–ionization,"
by **M. Prakash**,
Quark Matter '88, Seventh International Conference on Ultra–Relativistic Nucleus–Nucleus Collisions, Lenox, MA, Sept. 26–30, 1988, (talk), *Nucl. Phys.* **A498** (1989) 501c-506c.

15. "Rapidity spectra of secondary particles from nuclear collisions at ultrarelativistic energies,"
by R. Venugopalan and **M. Prakash**,
6th Workshop on Nuclear Dynamics, Jackson Hole, WY, Feb. 17–24, 1990, pg: 90-93, (talk).

16. "Spectra of secondary particles from nuclear collisions at ultrarelativistic energies,"
by **M. Prakash**,
Heavy Ion Physics at the AGS, BNL, Upton, NY, March 5–7, 1990, pg: 371-383, (talk).

17. "How fast can a neutron star rotate?,"
by **M. Prakash**,
Vortices in Laboratory and Cosmic Superfluids, at NORDITA, Copenhagen, June 11-15, 1990, (talk).

18. "Simulations of the Boltzmann equation for bosons,"
by G. M. Welke, G. F. Bertsch and **M. Prakash**,
7th Workshop on Nuclear Dynamics, Key West, FL, Jan. 25 – Feb. 2, 1991, pg: 189-195.

19. "2+1–hydrodynamics of secondaries in ultrarelativistic nuclear collisions,"
by R. Venugopalan, **M. Prakash**, M. Kataja and V. Ruuskanen,
7th Workshop on Nuclear Dynamics, Key West, FL, Jan. 25 – Feb. 2, 1991, pg: 203-209.

20. " Hadrons off-equilibrium,"
by **M. Prakash**, Manju Prakash, R. Venugopalan and G. M. Welke,
7th Workshop on Nuclear Dynamics, Key West, FL, Jan. 25 – Feb. 2, 1991, (talk), pg: 224-233.

21. "Rapid cooling of neutron stars,"
by **M. Prakash**,
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22. "Anharmonicity of the nuclear matter ground state and the RHA,"
by P. J. Ellis, E. K. Heide, S. Rudaz and **M. Prakash**,
in *Realistic Nuclear Structure*, Proc. Int. Conf. and Symp., Stony Brook, NY, 1992, *Phys. Rep.* **242** (1994) 379-385.

23. "How fast is equilibration in hot hadronic matter?,"
by **M. Prakash**, Manju Prakash, R. Venugopalan and G. M. Welke,
in Quark Matter '93, Borlange, Sweden, 1993, (talk),
Nucl. Phys. **566** (1994) 403c-406c.

24. "Coupling of longitudinal and transverse flow in relativistic heavy ion collisions,"
by R. Venugopalan, **M. Prakash**, M. Kataja and V. Ruuskanen,
in Quark Matter '93, Borlange, Sweden, 1993,
Nucl. Phys. **566** (1994) 473c-476c.

25. "Three-particle interactions in a quark–gluon plasma,"
by P. Lichard and **M. Prakash**,
in Int. Conf. on Strong Interactions at Finite Temperature, Santa Barbara, CA, August, 1993, (talk).

26. "Newly-born hot neutron stars,"
by I. Bombaci, **M. Prakash**, Manju Prakash, P. J. Ellis, J. M. Lattimer and G. E. Brown,
in Proc. of 5th International Conference on Nucleus–Nucleus Collisions, Taormina, Italy, 30 May – 4 June, 1994,
Nucl. Phys. A583 (1995) 623c-628c.

27. "Hydrodynamics for Ultrarelativistic Nuclear Collisions,"
by **M. Prakash,**
in Workshop on large scale numerical studies of QCD, July 28, 1994, Santa Fe, New Mexico (Plenary talk).

28. "Neutrinos from protoneutron stars: A probe of hot and dense matter"
by S. Reddy and **M. Prakash**
in Advances in Nuclear Dynamics, eds. W. Bauer and A. Mignerey, (New York: Plenum Press), 1996, pg: 237-245.

29. "Composition and Neutrino Opacities in Newborn Neutron Stars,"
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30. "Strangeness in Stellar Matter,"
by **M. Prakash**, S. Reddy, J. M. Lattimer and P. J. Ellis ,
Strangeness '96, May 15-17, 1996, Budapest,
Heavy Ion Physics **4** (1996) 271-292; (talk).

31. "The Radius of the Neutron Star RX J185635-3754 and Implications for the Equation of State,"
J. M. Lattimer and **M. Prakash**,
18th Texas Symposium on Relativistic Astrophysics: "Texas in Chicago," Chicago, Dec 15-20, 1996, pg 589-591.

32. "The Equation of State in Nucleon and Strange Stars,"
M. Prakash,

Intersections of Particle and Nuclear Physics: 6th Conference, May 27–June 2, 1997, Big Sky, Montana,
AIP Conference Proceedings, ed. T. W. Donnelly, pp 1007-1021, (talk).

33. "Theoretical Analysis of Dilepton Yields in Relativistic Heavy-Ion Collisions at the SPS,"
M. Prakash
Symposium on signals at the SPS and the AGS: J/Ψ, Low Mass Dileptons and Antiprotons, RHIC Summer Study '97,
July 14–16, Brookhaven, (talk).

34. "Strangeness in Stellar Matter,"
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International Conference on Hypernuclear and Strange Particle Physics,
October 13-18, 1997, Brookhaven, eds. H. Chrien & J. Millener, Nucl. Phys. A 639 (1998) 433c-442c (talk).

35. "The high density equation of state and neutron star observables,"
C.-H. Lee, S. Reddy and **M. Prakash**,
APCTP Workshop on Astro-hadron physics: Properties of Hadrons in matter, Oct 25-32, 1997, Seoul, Korea. Edited by G.E. Brown, C.-H. Lee, H.K. Lee, and D.-P. Minh, World Scientific Publishers, 1999, p. 624 (talk)

36. "Neutrino opacities at high density and the protoneutron star evolution,"
S. Reddy, **M. Prakash**, and J. M. Lattimer,
Second Oak Ridge Symposium on Atomic and Nuclear Astrophysics, Oak Ridge, Tennessee, Dec 2-6, 1997,
in "Stellar Evolution, Stellar Explosions, and Galactic Chemical Evolution," ed A. Mezzacappa, (IOP Publishing: Bristol) 585.

37. "The EOS and neutrino interactions in dense matter,"
M. Prakash and S. Reddy
in Nuclear Astrophysics, eds. M. Buballa, W. Nörenberg, J. Wambcah & A.Wirzba (GSI: Darmstadt, 1998) 187-200, (talk).

38. "Neutrinos from protoneutron stars,"
J. Pons, S. Reddy, **M. Prakash**, and J. M. Lattimer,
in Nuclear Astrophysics, eds. M. Buballa, W. Nörenberg, J. Wambcah & A.Wirzba (GSI: Darmstadt, 1998) 201-205, (talk).

39. "Nucleon effective masses in field theories of dense matter,"
C.-H. Lee, S. Reddy, and **M. Prakash**,
in Nuclear Astrophysics, eds. M. Buballa, W. Nörenberg, J. Wambcah & A.Wirzba (GSI: Darmstadt, 1998) 86-90, (talk).

40. "Supernova Neutrinos as a Probe of Dense Matter," in Supernova Early Alert Network, Boston, Sep. 11-12, 1998, 181-193, *Invited Talk*.

41. "Seeking Strangeness in Stellar Matter," in "INT Workshop on Strangeness," Sep 29 - Oct 2, 1998, Seattle, *Invited Talk*.

42. "Hydrodynamical Description of e^+e^- Yields from Relativistic Nucleus-Nucleus Collisions," in International Workshop on Electromagnetic Probes of In-Medium Effects in Strongly Interacting Systems, Mar 15-26, 1999, ECT, Trento, Italy, *Invited Talk*.

43. "Baryonic Contributions to e^+e^- yields in a Hydrodynamical Model of Pb+Au Collisions at the SPS,"
Quark Matter 1999, Torino, Italy, *talk*.

44. "Neutrino Interactions in Dense Matter,"
in XXIII School of Theoretical Physics, Recent Developments in Theory of Fundamental Interactions," Sep 15-22, 1999, Ustron, Poland,
Acta Physica Polonica, **B30** (1999) 3187-3209, *Invited Lecture*

45. "Neutrino Processes and Correlations in Dense Matter: Astrophysical Applications,"
Sep 27-28, 1999, in workshop on Neutrino Processes and Correlations in Dense Matter, Nordita, Denmark *Invited Talk*

46. "Strange Pathways for Black Hole Formation,"
Dec 10-12, 1999, in Prospects in Hypernuclear and Strangeness Physics: A Symposium in Honor of Carl Dover, BNL *Invited Talk*

47. "Effects of Strong Magnetic Fields on Neutron Star Structure,"
by C. Y. Cardall, **M. Prakash**, and J.M. Lattimer,
American Astronomical Society Meeting 196, #17.02 (2000) (talk)

48. "The Isolated Neutron Star RX J185635-3754,"
by F.M. Walter, P. An, J.M. Lattimer, and **M. Prakash**,
in Highly Energetic Physical Processes and Mechanisms for Emission from Astrophysical Plasmas, Proceedings of IAU Symposium #195, held at Montana State University – Bozeman, 6–10 July, Published by Astronomical Society of the Paciic, San Francisco, p. 437 (2000) (talk)

49. "The Role of the Nuclear Equation of State in Astrophysics"
Feb 19-23, 2000, in EOS 2000, Workshop on the Nuclear Equation of State in Astrophysics and Heavy-Ion Collisions, GSI, Darmstadt *Invited Talk*

50. "Neutrino Effects in Stellar Cooling,"
June 16-21, 2000, in Neutrino 2000, Sudbury, Canada *Invited Talk*

51. "Probing Quark Matter in Neutron Stars,"
Jan 15-20, 2001, in QM2001, Stony Brook, U.S.A. *Invited Talk*; hep-ph/0105158; Nuclear Physics A698 (2002) 440c-443c.

52. "Equation of State of Supernova Matter,"
Feb 16-17, 2002, Dallas Fort Worth, TSI Collaboration Meeting, *Invited Talk*.

53. "Observability of Neutron Stars with Quarks,"
July 18-24, 2002, in QM 2002, Nante, France, *Invited Talk*; Nuclear Physics A715 (2003) 835c-838c. astro-ph/0209122.

54. "Differential Neutrino Emissivities in the Supernova Environment ,"
Feb 13-17, 2003, Florida, TSI Collaboration Meeting, *Invited Talk*.

55. "A Tale of Two Mergers: Searching for Strangeness in Stars"
Mar 12-17, 2003, in SQM 2003, Atlantic Beach, North Carolina, *Invited Talk*;
Journal of Physics G: Nuclear and Particle Physics, **30** (2003) S451-S460; arXiv:astro-ph/0305306.

56. "A Tale of Two Mergers"
July 28-Aug 1, 2003, in Physics and Astrophysics of Neutron Stars, Santa Fe, New Mexico, *Invited Talk*.

57. "Metastability of Newly-Born Neutron Stars with Exotica,"
July 28-Aug 1, 2003, in Physics and Astrophysics of Neutron Stars, Santa Fe, New Mexico, *Invited Talk*.

58. "Neutrino Processes in Core-Collapse Supernovae and Neutron Stars in Their Infancy and Old Age,"
Nov 10-14, 2003, KIAS-APCTP International Symposium in Astro-Hadron Physics, Seoul, Korea, *Invited Talk*; arXiv:astro-ph/0403038.

59. "Mergers of Binary Stars: The Ultimate Heavy-Ion Experience,"
Jan 11-18, 2004, Quark Matter 2004, Oakland, USA, *Invited Talk*;
Journal of Physics G: Nuclear and Particle Physics, **30** (2004) S1279-S1282; [astro-ph/0403374].

60. "Isospin Asymmetry in Nuclei, Neutron Stars, and Heavy Ion Collisions",
Feb 5-12, 2005, 21st Winter Workshop on Nuclear Dynamics, Breckenridge, Colorado, (2005).

61. "Quark Matter and the Astrophysics of Neutron Stars,"
Nov 14-20, 2006, Quark Matter 2006, Shanghai, China, *Invited plenary talk*;
J. Physics G: Nucl. Part. Phys. **34** (2007) S253; [astro-ph/0704.0207].

62. "Equation of State and Astrophysics,"
Department of Energy (DOE) 2007 Long Range Planning Meeting,
(Chicago, IL, Jan 19-21, 2007)
Invited Plenary Talk

63. "The Role of the Equation of State in Binary Mergers"
Ringberg Castle Workshop on "Short Gamma-Ray Bursts,"
(Tegernsee, Germany, Mar 26-30, 2007)
Invited plenary talk.

64. "Neutron Stars - I" and "Neutron Stars - II" (2 talks),
"Collective Dynamics in High-Energy Collisions, Medium Properties, Chral Symmetry and Astrophysical Phenomena"
(Berkeley, CA, May 21-25, 2007)
Invited Summer School Lectures

65. "Ramifications of the Nuclear Symmetry Energy for Neutron Stars, Nuclei, and Heavy-Ion Collisions,"

to appear in the proceedings of the International Symposium on Exotic States of Nuclear Matter (EXOCT 2007),
(Catania, Italy, 11-15 Jun 2007); [http://arxiv.org/abs/0711.4652]
(Invited plenary talk presented by collaborator Andrew Steiner)

66. "Hot Topics in Neutron Star Research"
in the Institute of Nuclear Theory 5-week summer program on "The Neutron Star Crust and Surface",
(Seattle, WA, June 18 - July 20, 2007)
Invited Summary & Outlook Talk:

67. "Transport Properties of a Yukawa Fluid,"
in the 2007 Midwest Theory Get-Together
(Argonne, IL, Oct 5-6, 2007)
(Invited talk presented by graduate student Sergey Postnikov)

68. "The Pervasive Role of the Nuclear Symmetry Energy in the Structure and Evolution of Neutron Stars"
International Conference on Nuclei in the Cosmos-X,
Mackinac Island, MI, July 28 - Aug 1, 2008, *Invited Plenary Talk*;
Proceedings of Science (NIC X) 065, 2009; [arXiv:0812.2002]

69. "Shear viscosity of the outer crust of neutron stars: Ion contribution",
O.L. Caballero, S. Postnikov, C.J. Horowitz, and **M. Prakash**
International Workshop on "The Lead Radius Experiment (PREX) and Neutron Rich Matter in the Heavens and on Earth",
at the Jefferson National Laboratory,
Newport News, VA, Aug 17-19, 2008,
Poster presented by OU graduate student Sergey Postnikov

70. "Constraints on the Equation of State from Astrophysical Observations",
International Workshop on "The Equation of State at Nonzero Density and Temperature, and its Application in Astrophysics",
Argonne, IL, Aug 25 - Aug 29, 2008), *Invited Opening Plenary Talk*

71. "Transport Coefficients of Interacting Hadrons"
A. Wiranata and M. Prakash,
in the 2008 Midwest Theory Get-Together
Argonne, IL, Oct 18, 2008, *Talk presented by OU graduate student Anton Wiranata*

72. "Transport Properties of Nucleons,"
S. Postnikov and M. Prakash
in the 2008 Annual meeting of the Division of Nuclear Physics of the American Physical Society,
Oakland, CA, Oct 24-26, 2008,
Contributed talk presented by OU graduate student Sergey Postnikov

73. "Deconstructing a Neutron Star",
Undergraduate Physics Research Conference - I, University; Faculty Research Presentation Athens, OH, Jan-17, 2009,
Conference Opening Talk

74. "Deconstructing a Neutron Star",
M. Prakash
International Workshop XXXVII on Gross Properties of Nuclei and Nuclear Excitations in Hirschegg, Austria, January 18 - 24, 2009, *Opening Plenary Talk*

75. "Bulk Viscosity of Interacting Hadrons,"
A. Wiranata and M. Prakash,
Nucl. Phy. A, 830 (2009) 219c-222c; [arXiv: 0906.5592]
Talk presented by A. Wiranata

76. "Transport Coefficients and Relaxation Times: Hadron Resonance Gas,"
M. Prakash
Joint CATHIE-TECHQM International Meeting,
Brookhaven National Laboratory, NY, Dec 14-18, 2009,
Plenary Talk

77. "Comparison of Viscosities from Chapman-Enskog and Relaxation-Time Methods",
A. Wiranata, M. Prakash, P. Chakraborty and J. I. Kapusta, Student Research & Activity Fair, Ohio University, Athens, Ohio, May 13, 2011, *Poster*.

78. "Potential Models for the Supernova Equation of State",
K. Moore, M. Prakash and C. Constantinou, Student Research & Activity Fair, Ohio University, Athens, Ohio, May 13, 2011, *Poster*

79. "Rapid Cooling of the Neutron Star in Casseopeia A Triggered by Neutron Superfluidity in Dense Matter",
Workshop on Neutrino & Nuclear Astrophysics, , Los Alamos, NM, USA, June 2, 2011,
M. Prakash, *Invited Talk*

80. "Open Issues in Neutron Star Physics",
Multi-Messenger Probes of Nuclear Physics, July 11 - Aug 5, Institute for Nuclear Theory, Seattle, WA, August 4, 2011,
M. Prakash, *Invited Talk*

81. "Comparison of Viscosities from Chapman-Enskog and Relaxation-Time Methods",
International Conference on Critical Point and Onset of Deconfinement, China Central Normal University and Ministery of Education of China, CCNU, Wuhan, China, Nov 10, 2011,
A. Wiranata (Presenter), M. Prakash and P. Chakraborty, Central European Journal of Physics, 10 (2011) 1349-1351; arXiv:1201.3101 (nucl-th)

82. "Potential Model Approaches to the Supernova Equation of State",
C. Constantinou (Presenter), B. Muccioli and M. Prakash, Ohio Section of the American Physical Society, American Physical Society, Columbus, OH, April 14, 2012, *Contributed talk*

83. "Thermal Properties of Supernova Matter",
C. Constantinou (Presenter), B. Muccioli and M. Prakash, Students' Research & Activity Fair, Ohio University, Athens, OH, May 3, 2012.

84. "Thermal Effects in Supernova Matter",
C. Constantinos (Presenter), M. Prakash and J.M. Lattimer, INT Program on Core-Collapse Supernovae, University of Washington, Seattle, WA, July 5, 2012, *Invited talk.*

85. "How resonances affect the ratio of shear viscosity to entropy density in the hadronic gas",
A. Wiranata, N. Demir, S. Bass and M. Prakash, Quark Matter 2012, International, Washington, D.C., August 13, 2012, *Poster.*

86. "Thermal Properties of the APR Equation of State",
B. Muccioli (Presenter), C. Constantinou, and M. Prakash, Midwest Theory Group Meeting, Argonne National Laboratory, Argonne, IL, September 7, 2012, *Invited talk.*

87. "Shear Viscosity & the K-Matrix Formalism",
A. Wiranata, (Presenter), V. Koch, X.N. Wang and M. Prakash, QCD Structure, CCNU, Wuhan University, Wuhan, China, October 7, 2012, *Invited talk.*

88. "What we must do",
Town Meeting on Nuclear Astrophysics: Opportunities, Joint Instititute of Nuclear Astrophysics, Detroit, October 9, 2012, *Session Chair's Talk.*

89. "Shear Viscosity & the K-Matrix Formalism",
A. Wiranata (Presenter), V. Koch, X.N. Wang, and M. Prakash, 4th Asian Triangle Heavy-Ion Conference, Pusan National University, Pusan, South Korea, November 14, 2012, *Invited Talk.*

90. "Neutron Stars and the EOS",
M. Prakash, 8th International Workshop on Critical Point and Onset of Deconfinement", Lawrence Berkeley Laboratory, Napa, California, USA, March 11, 2013. *Invited Plenary Talk.*

91. "The Supernova Equation of State: Finite-Range, Momentum-Dependent Potential Approach",
C. Constantinou (Presenter), B. Muccili, and M. Prakash, OSAPS meeting on "From Quarks to Super Clusters: Physics of the Very Big and the Very Small", Athens, OH, USA, March 29, 2013, *Contributed Talk.*

92. "Shear Viscosity of Hadrons with K-Matrix Cross Sections",
M. Prakash (Presenter), A. Wiranata, V. Koch, and X.-N. Wang, OSAPS meeting on "From Quarks to Super Clusters: Physics of the Very Big and the Very Small", Athens, OH, USA, March 29, 2013, *Contributed Talk.*

93. "Shear Viscosity of Hadrons with K-Matrix Cross Sections",
A. Wiranata (Presenter), V. Koch, M. Prakash and X.-N. Wang, Strangeness in Quark Matter, University of Birmingham, Birmingham, UK, July 21, 2013, *Contributed Talk.*

94. "The Ratio of Shear Viscosity to Entropy Density in a Multi-Component System", A. Wiranata (Presenter), V. Koch, M. Prakash and X.-N. Wang, 15th National Nuclear Physics Conference, Shanghai, China, October 16, 2013, *Contributed Talk.*

95. "Can Hot Interacting Hadrons Become a Perfect Fluid", A. Wiranata (Presenter), V. Koch, M. Prakash and X.-N. Wang, New Frontiers in QCD 2013: Insight into QCD Matter from Heavy-Ion Collisions", YITP, Kyoto, Japan, November 18, 2013, *Contributed Talk.*

96. "Neutron Star News and Puzzles" M. Prakash, 45 Years of Nuclear Theory at Stony Brook: Tribute to Gerald E. Brown, Stony Brook, NY, USA, November 24, (2013), *Invited Plenary Talk.*

97. "Fluidity of hot interacting hadrons", A. Wiranata (Presenter), V. Koch, M. Prakash, and Xin-Nian Wang, Midwest Critical Mass, University of Toledo, Ohio, March 8, 2014, *Contributed Talk.*

98. "The η/s of flowing hadrons out of chemical equilibrium". A. Wiranata (Presenter), V. Koch, M. Prakash, and Xin-Nian Wang, 30th Winter Workshop on Nuclear Dynamics 2014, Galveston, Texas, April 06-12, 2014, *Contributed Talk.*

99. "Key Nuclear Physics Issues", M. Prakash, INT 14-2a program "Binary Star Coalescence as a Fundamental Physics Laboratory", June 30 - August 1, 2014, Seattle, Washington, *Invited Talk.*

100. "Thermal properties of dense matter", M. Prakash, Topical Collaboration Meeting on Neutrinos and nucleosynthesis in hot and dense matter, Feb 27-Mar 1, 2015, LBL, Berkeley, *Invited talk.*

101. "Thermal Properties of Hot and Dense Matter", B. Muccioli (Presenter), C. Constantinou, M. Prakash and J. M. Lattimer, JINA-CEE Frontiers in Nuclear Astrophysics, Michigan State University, East Lansing, Michigan, March 23-25, 2015, *Contributed Talk.*

102. "Thermal Properties of Hot and Dense Matter", B. Muccioli, C. Constantinou, M. Prakash and J. M. Lattimer, Ohio-Region Section of the APS (OSAPS) Spring Meeting, March 27-28, 2015, *Contributed Talk.* "Thermal Properties of Hot and Dense Matter".

103. "Thermal properties of dense matter", Invited talk: M. Prakash, International Workshop on Binary Neutron Star Mergers, May 27-29, 2015, Thessaloniki, Greece, *Invited Talk.*

104. "Thermal and adiabatic indices of hot and dense matter of relevance to binary neutron star mergers", C. Constantinou (Presenter), B. Muccioli, M. Prakash and J. M. Lattimer, International Workshop on Binary Neutron Star Mergers, May 27-29, 2015, Thessaloniki, Greece, *Contributed Talk.*

105. "Thermal Effects in Dense Matter: The Bulk Homogeneous Phase", C. Constantinou (Presenter), B. Muccioli, M. Prakash and J. M. Lattimer, International Workshop on Microphysics in Computational Relativistic Astrophysics, Nordita, Aug 17, 2015, Stockholm, Sweden, *Contributed Talk.*

106. "Neutron Star Physics", M. Prakash, International Workshop on Extreme Gravity, Montana State University, Aug 20, 2015, Bozeman, Montana, *Invited Talk*.

107. "Thermal Effects in Dense Matter", C. Constantinou (Presenter), B. Muccioli, M. Prakash and J. M. Lattimer, XLIV International Workshop on Gross Properties of Nuclei and Nuclear Excitations entitled QCD Matter: Dense and Hot, Jan 17-23, 2016, Hirschegg, Austria.

108. "The Complete APR Equation of State", C. Constantinou (Presenter), B. Muccioli, M. Prakash and J. M. Lattimer, Int. Symposium on "Neutron Stars in the Multi-Messenger Era; Prospects and Challenges", Athens, OH, May 24, 2016.

109. "Pairing Phase Transition with a Random Distribution of Energy Levels", Md. Al Mamun (Presenter) and M. Prakash, Midwest Theory Get Together, Argonne National Laboratory, Oct 1, 2016.

110. "Thermal Effects in Dense Matter Beyond Mean Field Theory", Sudhanva Lalit (Presenter), C. Constantinou and M. Prakash, Midwest Theory Get Together, Argonne National Laboratory, Oct 1, 2016.

111. "Thermal and non-thermal effects in dense matter", Invited talk, M. Prakash, International Conference on Nuclear Theory, ICNT17, MSU, East Lansing, MI, April 7, 2017.

112. "Pairing properties from random distributions of single-particle energy distributions", Invited talk, A. A. Mamun and M. Prakash (Presenter), Symposium on "Light, color and dense matter", Minneapolis, June 12-14, 2017.

113. "Dense Matter Equation of State for Neutron Star Mergers",
Invited talk, **M. Prakash**,
INT-JINA Symposium: "First multi-messenger observation of a neutron star merger and its implications for nuclear physics", March 12-14, 2018, INT, Seatlle

114. "Equation of state of low-density supernova matter with multiple nuclei in the mean field approximation",
S. Lalit (Presenter), C. Constantinou, M. A. Al Mamun, M. Prakash,
Contributed talk, Spring meeting of the APS, Columbus, OH, USA, April 14-17, 2018.

115. "Role of fluctuations on the pairing properties of nuclei in the random spacing model",
M. A. A. Mamun (Presenter), C. Constantinou and M. Prakash,
Contributed talk, Spring meeting of the APS, Columbus, OH, USA, April 14-17, 2018.

116. "Role of fluctuations on the pairing properties of nuclei in the random spacing model",
M. A. A. Mamun (Presenter), C. Constantinou and M. Prakash,
Contributed talk, 6th International Workshop on Compound-Nuclear Reactions and Related Topics, Sep 24-28, LBL, Berkeley, CA
6 pages, arXiv: 1812.09988.

117. "Research Themes in N3AS Projects at Ohio University"
Invited talk, **M. Prakash**,
"N3AS Collaboration meeting", Nov 18, 2018, LBL, Berkeley.

Invited Seminars and Colloquia (since 2000)

1. "Prospects of Detecting Dense Matter Superfluidity Through Cooling of Neutron Stars" Sep 13, 2000, MIT, Boston, *Seminar*

2. "Global Observables and Correlations,"
in Workshop on Heavy Ion Physics for the Next Decade, Oct 27, 2000, BNL, *Invited Talk*

3. "Dense Matter in Supernovae and Neutron Stars,"
in Workshop on Nuclear Structure and Astrophysics for the DNP Long Range Planning for the Next Decade, Nov 11, 2000, Oakland, *Invited Talk*

4. "The Equation of State and Structure of Strongly Magnetized Neutron Stars,"
in the ITP workshop on Spin, Magnetism and Cooling of Young Neutron Stars, Nov 16, 2000, Santa Barbara, *Seminar*

5. "Puzzles, Promises, and Prospects in the Physics and Astrophysics of Neutron Stars,"
July 26, 2001, Seattle, *Seminar*

6. "Cooling of Neutron Stars,"
in International Workshop on Neutron Stars, Oct 28-Nov 1, 2002, ECT, Trento, Italy, *Invited Review Talk*.

7. "Metastability of Newly-Born Neutron Stars with Exotica,"
June 12, 2003, Morelia, Mexico, *Colloquium*.

8. "Mergers of Binary Stars,"
Mar 24, 2004, Indiana University, Bloomington, USA, *Colloquim*.

9. "Composition, Structure & Evolution of Neutron Stars,"
Oct 30, 2004, Chicago, DNP 2004 Meeting (Strongly Interacting Fermions: Froms Traps to Stars), *Invited Talk*

10. "The Physics of Neutron Stars,"
Dec 4, 2004, McGill, Subal Das Gupta Festschrift, *Invited Talk*

11. "The Physics of Neutron Stars,"
July 10-15, 2005, Lewiston, Maine, Gordon Research Conference on Frontiers in Nuclear Physics, *Invited Talk*

12. "The Role of the Equation of State in Binary Mergers,"
Feb 14, 2006, Ohio State University, *Colloquium*

13. "From Nuclei to Neutron Stars,"
June 13, 2006, Jefferson Laboratory Users Group Annual Meeting,
Newport News, *Invited plenary talk*

14. "The Equation of State of Dense Matter,"
in the Division of Nuclear Physics Town Meeting on
"Nuclear Matter Equation of State in the Laboratory and in Astrophysics" for the NSAC Long Range Plan of 2007, Chicago on January 19-21, 2007, *Invited plenary talk*

15. "Nuclear, Neutrino, and Gravity-Wave Physics Through the Study of Neutron Stars,"
Penn State University, Mar 1, 2007, *Colloquium*

16. "The Role of the Equation of State in BInary Mergers,"
Ringberg Castle Workshop on "Short Gamma-Ray Bursts,"
Tegernsee, Germany, Mar 26-30, 2007

17. "Binary Mergers and the Dense Matter Equation of State,"
at the Joint Institute for Nuclear Astrophysics,
Michigan State University, East Lansing, April 9, 2007, *Seminar*

18. "Transport Properties of a Delta-Shell Gas with Long Scattering Lengths",
Kent State University, Kent, Feb 27, 2009, *Seminar*

19. "Toward a Model-Independent Equation of State of Neutron-Star Matter",
Topical Collaboration Meeting on "Nuclear and Neutrino Astrophysics",
Los Alamos, NM, March 5, 2010, *Invited Talk*

20. "New Lessons from New Results of Neutron Stars",
University of Notre Dame, Notre Dame, Dec 1, 2010, *Colloquium*

21. "What a Two Solar Mass Pulasar Really Means",
Department of Physics and Astronomy, Ohio University, February 1, 2011, *Joint INPP & API Seminar*

22. "News on Neutron Star Structure",
218th Meeting of the AAS, Neutron Stars & Gravitational Waves: The Next Step Toward Detection, American Astronomical Society, Boston, News on Neutron Star Structure, May 22, 2011, *Invited Talk.*

23. "Structure & Composition of Neutron Stars",
University of British Columbia, Triumf, UBC, Vancouver, Canada, August 11, 2011, *Colloquium.*

24. "Rapid Cooling of the Neutron Star in Casseopeia A Triggered by Neutron Superfluidity in Dense Matter",
Department of Physics and Astronomy, Ohio University, September 27, 2011, *Joint INPP & API Seminar.*

25. "Cooling of the Neutron Star in Cassiopei A",
University of Maryland, College Park, Maryland, May 14, 2012, *Seminar*

26. "Why the Neutron Star in Cassiopeia A is Cooling So Fast?",
Boston College, Boston, MA, May 21, 2012, *Colloquium.*

27. "Some Unresolved Issues in Neutron Star Physics",
in Int. Conf. on "Heating Nuclei, Boiling Black Holes ... & Burning Rubber", McGill University, Montreal, Canada, June 11, 2012, *Invited Talk.*

28. "Never Say Never in the World of Neutron Stars",
Apalachian Section of the American Association of Physics Teachers, Ohio University, Athens, OH, October 19, 2012, Athens, OH, *After dinner talk.*

29. "Toward a Model Independent Equation of Neutron Star Matter"
Wayne State University, Detroit, MI, March 26, 2013, *Colloquium.*

30. "Opportunities and Challenges in Education and research (A Personal Perspective)"
National Institute of Advanced Studies, Bangalore, India, April 19, 2013, *Seminar.*

31. "Rapid Cooling of the Neutron Star in Cassiopeia A",
University of Waterloo, Waterloo, CA, August 7, 2013, *Seminar.*

32. "The Equation of State of Neutron Star Matter"
Perimeter Institute, Waterloo, CA, August 8, 2013, *Seminar.*

33. "Lessons from New Observations of Neutron Stars",
Argonne National Laboratory, Argonne, IL, September 6, 2013, *Colloquium.*

34. "Exploration of Extreme Energy Density Matter Through Neutron Stars",
Department of Physics, Texas A & M University, College Station, TX, April 17, 2014, *Colloquium.*

35. "The Neutron Star in Cassiopeia A and What it is Telling Us",
Cyclotron Laboratory, Texas A & M University, College Station, TX, April 18, 2014, *Seminar.*

36. "The Four Forces and Neutron Stars",
Department of Physics, Kent State University, Dec 8, 2016, *Colloquium.*

Campus-Wide Seminars and Outreach Articles:

Physical Chemistry Outreach Seminars:

1. "On the composition and structure of neutron stars,"
Stony Brook, Spring 1994

Research Seminars in Science and Engineering:

2. "Strange pathways for black hole formation,"
Baruch College, Stony Brook, Oct 12, 1995

3. "The Physics of Neutron Stars,"
Society of Phyiscs Graduate Students, Oct 20, 2000, Stony Brook,

4. “Physics in the World of Neutron Stars,”
Physics and Astronomy Open Nights,” Stony Brook, Nov 9, 2001

5. “Mergers of Binary Stars: The Ultimate Heavy-Ion Experience,”
Science Open Nights, The Worlds of Physics,” Stony Brook, Mar 12, 2004

6. “The Physics of Neutron Stars,”
Society of Phyiscs Graduate Students, Nov 19, 2004, Stony Brook,

7. “Deconstructing a Neutron Star,”
Society of Phyiscs Graduate Students, Jan 17, 2009, Athens, Ohio

8. “The Physics and Astrophysics of Neutron Stars,”
Ohio University Department of Physics & Astronomy Newsletter #24, 3 pages, Oct 2011.

9. “Extreme States of Matter from Explosive Events in the Universe”,
Science Cafe Talks, Ohio University, Baker Center, Athens, OH, May 7, 2012.

10. “Cosmic Explosions and What They Leave Behind”,
Physics & Astronomy Open House, Athens, OH, Nov 9, 2015.

Ph.D. Degree Thesis Supervision

1. K. Kolehmainen	Surface Properties of Neutron-Rich Nuclei	1983
2. R. Vogt	Charmonium Interactions with Hadronic Matter	1989
3. G. M. Welke	Dynamics of Relativistic Heavy-Ion Collisions	1990
4. R. Venugopalan	Spacetime Evolution of Superdense Matter in Ultrarelativistic Nuclear Collisions	1992
5. S. Reddy	Neutrinos from Protoneutron Stars: Probing Hot and Dense Matter	1994–1998

President's Award for Distinguished Doctoral Research

6. A. W. Steiner	The Equation of State and Neutrino Interactions in Neutron Stars with Quarks	1999–2002

Max Dresden's Prize for the Best Thesis in Theoretical Physics (2002)
APS Division of Nuclear Physics Dissertation Award (2004)

7. M. Carmell	The Equation of State of Supernova Matter	2001-2005
8. S. Ratkovic	Topics in Neutrino and Gravitational Astrophysics	2002-2005

Max Dresden's Prize for the Best Thesis in Theoretical Physics (2005)

9. S. Postnikov	Topics in the Physics and Astrophysics of Neutron Stars	2006-2009
10. A. Wiranata	Transport Properties of Interactiong Hadrons	2007-2011
11. C. Constantinou	Thermal Effects in Supernova Matter	2009-2013
12. B. Muccioli	Equations of State for Simulations of Supernovae, Neutron Stars and Binary Mergers	2012-2016

13. Md. Abdulla Al Mamun	Nuclei, nucleons and quarks in astrophysical phenomena	2014-2019
14. S. Lalit	The role of the equation of state core-collapse supernovae, neutron stars and their mergers	2014-2019

Master's Degree Thesis Supervision

1. R. Knorren	Strangeness and Neutrino Trapping in Neutron Stars	1995
2. K. Moore	The Equation of State of Supernova Matter	2009-2011
3. Md. Abdullah Al Mamun	Thermal Properties of Nuclei and Their Level Densities	2014- 2015

Undergraduate Honors Tutorial College Thesis Supervision

1. P. Greene	Neutron Stars with and without Quarks	2007- 2008
2. C. McCrone	Fluctuations in Ideal Quantum Gases	2007- 2008
3. A. Dewald	Semi-Classical Analysis of Power- Plus Inverse-Power-Law Potentials	2015-2016

Teaching

Undergraduate:

1. PHY 102	Recitation	Fall 1982
2. PHY 251	Recitation	Fall 1983
3. PHY 102	Recitation	Fall 1986
4. PHY 306	Thermal and Statistical Physics	Fall 1987
5. PHY 306	Thermal and Statistical Physics	Fall 1988
6. PHY 461	Modern Physics Research Through Computers	Spring 1994
7. PHY 132	Recitation	Spring 1998
8. PHY 306	Thermal and Statistical Physics	Fall 1997
9. PHY 306	Thermal and Statistical Physics	Fall 1998
10. PHY 306	Thermal and Statistical Physics	Spring 1999

11. PHY 306	Thermal and Statistical Physics	Spring 2000
12. PHY 306	Thermal and Statistical Physics	Fall 2000
13. PHY 308	Quantum Physics	Fall 2001
14. PHY 306	Thermal and Statistical Physics	Fall 2002
15. PHYS 131	Recitation	Spring 2005
16. PHYS 201	Introduction to Physics	Fall 2005
17. PHYS 251	Introduction to Physics	Spring 2006
18. PHYS 451	Quantum Mechanics	Fall 2006
19. PHYS 201	Introduction to Physics	Winter 2007
20. PHYS 399T	Nucl. & Part. Physics	Spring 2007
21. PHYS 451	Quantum Mechanics	Fall 2007
22. PHYS 412	Kinetic Theory & Statistical Physics	Spring 2008
23. PHYS 451	Quantum Mechanics	Fall 2008
24. PHYS 498T	Classical Mechanics	Winter 2008
25. PHYS 202	Introduction to Physics	Spring 2009
26. PHYS 498T	Classical Mechanics	Winter 2009
27. PHYS 203	Introduction to Physics	Spring 2010
28. PHYS 201	Introduction to Physics	Winter 2011
29. PHYS 299T	Electricity & Magnetism	Spring 2011
30. PHYS 498T	Classical Mechanics	Winter 2012
31. PHYS 202	Introduction to Physics	Spring 2012
32. PHYS 4021	Quantum Mechanics	Fall 2012
33. PHYS 4021	Quantum Mechanics	Fall 2013
34. PHYS 4900	Gravitation & Cosmology	Fall 2014
35. PHYS 4900	Computational Physics	Fall 2014
36. PHYS 3980T	Modern Physics - II	Spring 2015
37. PHYS 4980T	Quantum Mechanics - HTC Thesis	Fall 2015
38. PHYS 3980T	Modern Physics - HTC	Spring 2017
39. PHYS 3011	Thermal Physics	Spring 2018
40. PHYS 4900	Computational Physics	Fall 2018
41. PHYS 3011	Thermal Physics	Spring 2019
42. PHYS 4900	Neutron Star Physics	Spring 2019

Graduate and Advanced Graduate:

1. PHY 684	Ultrarelativistic Heavy-Ion Collisions	Spring 1986
2. PHY 684	Nuclear Matter under Extreme Conditions	Spring 1989
3. PHY 511	Quantum Mechanics	Fall 1989
4. PHY 680.3	Nuclear Astrophysics	Spring 1993
5. PHY 688 & AST 513	Nuclear and Neutrino Astrophysics	Spring 1995
6. PHY 685.02	Computational Physics	Fall 1995
7. PHY 585	SNARL: Supernova and Related Lectures	Spring 1997
8. PHY 585	NAPS: Nuclear Astrophysics Seminars	Fall 1997

9. PHY 306	Thermal and Statistical Physics	Fall 1997
10. PHY 585	NAPS: Nuclear and Particle Astrophysics Seminars	Spring 1998
11. PHY 531	Relativistic Astrophysics	
12. PHY 585	NAPS: Nuclear and Particle Astrophysics Seminars	Fall 1998
13. PHY 531	Nuclear, Neutrino, and Relativistic Astrophysics	Spring 1999
14. PHY 585	NAPS: Nuclear and Particle Astrophysics Seminars	Fall 1999
15. PHY 684	The Nuclear Many-Body Problem	Fall 1999
16. PHY 684	The Physics of RHIC	Fall 2000
17. PHY 688	The Astrophysics of Compact Objects	Spring 2003
18. PHY 540	Statistical Mechanics	Fall 2004
19. PHYS 688	Physics of Compact Objects	Winter 2006
20. PHYS 551	Quantum Mechanics	Fall 2006
21. PHYS 551	Quantum Mechanics	Fall 2007
22. PHYS 611	Quantum Mechanics	Winter 2007
23. PHYS 512	Kinetic Theory & Statistical Physics	Spring 2008
24. PHYS 551	Quantum Mechanics	Fall 2008
25. PHYS 605	Classical Mechanics	Fall 2009
26. PHYS 512	Kinetic Theory & Statistical Physics	Winter 2010
27. PHYS 605	Classical Mechanics	Fall 2010
28. PHYS 605	Classical Mechanics	Fall 2011
29. PHYS 5021	Quantum Mechanics	Fall 2012
30. PHYS 5021	Quantum Mechanics	Fall 2013
31. PHYS 6201	Gravitation & Cosmology	Spring 2014
32. PHYS 5021	Quantum Mechanics	Fall 2014
33. PHYS 5021	Quantum Mechanics	Fall 2015
34. PHYS 6201	Gravitation & Cosmology	Spring 2016
35. PHYS 5021	Quantum Mechanics	Fall 2016
36. PHYS 6001	Classical Mechanics	Fall 2017
37. PHYS 6001	Classical mechanics	Fall 2018
38. PHYS 6900	Gravitation & Cosmology	Fall 2018
39. PHYS 6900	Gravitation & Cosmology	Fall 2019

Undergraduate Research Initiative

1. J. Cooke	The Quark-Hadron Phase Transition in Protoneutron Stars	1994

Undergraduate Recognition Award for Excellence and Outstanding Achievement

2. B. Chann	Observability of Isolated Neutron Stars	1995
3. L. Judge	Computational Physics	1995
4. J. Homer	Evolution of Binary and Millisecond Pulsars	1996
5. J. Homer	Coalescing Neutron Stars and Black Holes	1997
6. V. Panjeti	Magnetic Fields in Neuton Stars	1997
7. A. Broderick	Strangeness in Dense Matter	1997
8. A. Broderick	Magnetic Fields in Dense Matter	1998
9. D. Yelle	Energy Deposition in Matter Through Neutrino Interactions	1998
10. F. M. Philip	Magnetic Atmospheres of Neutron Stars	1998
11. F. M. Philip	EOS of Magnetized Neutron Star Crusts	1999
12. A. Broderick	EOS of Magnetized Dense Matter	1999
Undergraduate Recognition Award for Excellence and Outstanding Achievement		
13. S. D. Christe	Delimiting the EOS of Dense Matter	2000
Undergraduate Recognition Award for Excellence and Outstanding Achievement		
14. C. Constantinou	Neutrino Emissivities from the Plasma Process in Supernovae	2002
Undergraduate Recognition Award for Excellence and Outstanding Achievement		
15. C. Constantinou	QM of Delta-Hole Potential	2003
Undergraduate Recognition Award for Excellence and Outstanding Achievement		
16. J. Pawlowski	Neutrino Reactions	2004
Undergraduate Recognition Award for		

17. S. Trujillo	r-Modes in Neutron Stars	2004
18. N. Patel	Binary Merger Rates	2004
19. C. McCrone	Fluctuations in Quantum Gases	2006-2007
20. P. Greene	Quark Matter in Neuton Stars	2006-2007
21. J. Snell	Computational Methods	2009
22. C. Dilitz	Computational Methods	2009
23. G. Canter	Computational Methods	2011
24. H. Cothrell	Computational Methods	2012
25. A. Dewald	Computational Methods	2014
26. A. Dewald	Quantum Mechanics	2015
27. A. Dewald	Quantum Mechanics	2016
28. Daniel Ivory	Computational Physics	2016
29. Jamison Lahman	Computational Physics	2016
30. Alexandra Semposki	Computational Physics	2018
31. Alexandra Semposki	Thermal pions in dense matter	2019

Publications with Undergraduates

1. "The Quark-Hadron Phase Transition in Protoneutron Stars,"
   J.R. Cooke & **M. Prakash**
   Journal of Undergraduate Research **1** (1995) 42-56.

2. "The Quark-Hadron Phase Transition in Protoneutron Stars,"
   by **M. Prakash**, J. R. Cooke & J. M. Lattimer,
   Phys. Rev. **D 52** (1995) 661-665.

3. "The Equation of State of Neutron-Star Matter in Strong Magnetic Fields,"

A. Broderick, **M. Prakash** & J.M. Lattimer,
ApJ **537** (2000) 351-367.

Research with High School Students

1. K. Rhindres	Binaries with Black Holes	2001
Summer Simons Fellow		
Intel Science Talent Search Semifinalist (2001)		
	Masses of Black Holes in X-ray Binaries	
2. J. Dickenson	Observing Binary Stars	2001
3. N. Patel	Bending of Photons	
	Near a Black Hole	2002
Summer Simons Fellow		
Intel Science Talent Search Semifinalist (2002)		
	Photon Orbits Around a Black Hole	
4. J. Dickenson	Sizing Neutron Stars	2002
Intel Science Talent Search Semifinalist (2002)		
	Sizing Neutron Stars	
5. S. Sauvino	Limiting Masses of Compact Stars	2002
6. S. Saikumar	Astrophysical Concepts	2002
7. S. Prakash	Gravitational Radiation	2003
8. L. Wang	High-Energy Heavy-Ion Collisions	2003
9. S. Prakash	Grasping Einstein's Gravity Waves	2004
Intel Science Talent Search Semifinialist (2005)		
10. L. Wang	How Much Heat	
	Can Charmonium Take?	2004
Intel Science Talent Search Semifinalist (2005)		
11. M. Payne	The van der Pol Oscillator	2007
12. S. Nanda	Rotation of Neutron Stars	2012

Teaching Initiatives

Undergraduate:

Development of a new course on

1. "Modern Physics Research Through Computers," spring 1994

2. "Research in Astrophysics," summer 1997

3. "Research in Astrophysics," summer 1998

I have organized and conducted undergraduate summer astrophysics research programs, in which six students participated in the summer of 1997. During the summer of 1998, three students joined this program. Most of these students have received REU and RAIRE awards to perform research. While each student has a separate problem to work on, we meet as a group each day to discuss the work being done. I have utilized this opportunity to equip our Astrophysics Initiative with adequate computational facilities so that future activities in dedicated undergraduate research may proceed smoothly.

Graduate and Advanced Graduate:

Development of a new course on

1. "Computational Physics," fall 1995
2. "Computational Methods for Modern Sciences," fall 1999

I have initiated new courses in which computational methods for modern sciences are taught. I have taken the primary responsibility in instructing graduates in the computational skills required for research. This is a project oriented credit-bearing course. Emphasis is placed on solving problems in interdisciplinary subjects including physics, astronomy, chemistry, and biology. The evaluation of the students is based on the completion of individual projects. A seminar presentation and a written report of the completed research is mandatory. The examination projects are chosen either from a list prepared by me or from those suggested by other faculty. I have made sure that the project is at an apposite level with the course matter.