

# Faculty and Research Staff of the Department of Physics and Astronomy

## Faculty

Stephon Alexander (Ph.D., Brown, 2000)

Particles and fields, relativity and cosmology, quantum gravity, theoretical cosmology, early universe cosmology, large scale structure, string theory, loop quantum gravity, mathematics of music.

Miles Blencowe (Ph.D., Imperial, London, 1989)

Condensed matter theory, Mesoscopic physics, open quantum systems, the quantum-classical correspondence, relativistic quantum information, biophysic.

Robert Caldwell (Ph.D., University of Wisconsin, Milwaukee, 1992)

Theoretical cosmology, gravitation, and relativistic astrophysics.

Brian Chaboyer (Ph.D., Yale University, 1993)

Theoretical stellar astrophysics, stellar populations.

Robert Fesen (Ph.D., University of Michigan, 1981)

Optical, UV, and infrared studies of supernovae and supernova remnants, and the interstellar medium.

Marcelo Gleiser (Ph.D., University of London, 1986)

Quantum and classical field theory, cosmology, complexity theory, and astrobiology.

Ryan Hickox (Ph.D., Harvard University, 2007)

Active galactic nuclei, galaxy evolution, large-scale structure of the Universe, the cosmic X-ray background.

Mary Hudson (Ph.D., University of California, Los Angeles, 1974)

Space plasma theory, plasma simulation, space weather, radiation belts, solar energetic particle trapping and effects of geomagnetic storms.

James LaBelle (Ph.D., Cornell University, 1985)

Ionospheric and magnetospheric physics, plasma measurements in space, remote sensing of ionospheric plasma processes.

Kristina Lynch (Ph.D., University of New Hampshire, 1992)

Ionospheric, auroral and mesospheric plasma physics; sounding rocket, CubeSat and laboratory plasma experiments.

Robyn Millan (Ph.D., University of California, Berkeley, 2002)

Experimental space physics, radiation belt dynamics, lightning, hard X-ray/gamma ray observations and instrumentation.



Roberto Onofrio (Ph.D., Rome 'La Sapienza' , Italy, 1991)

Phenomenology of elementary particle physics and gravitation: exotic atoms, gravity at small distances, microscopic tests of the equivalence principle, precision measurement with ultracold atoms, quantum metrology.

Chandrasekhar Ramanathan (Sc.D., Massachusetts Institute of Technology, 1996)

Experimental condensed matter physics and quantum information science, electron and nuclear spin resonance, measurement and control of many-body spin dynamics, quantum devices and sensors.

Alexander Rumberg (Ph.D., Harvard University, 1992)

Condensed matter experiment; electrical transport measurements of nanostructures such as quantum dots, nanomechanical resonators, and single-electron transistors; quantum information science and quantum measurements; controlled physical realizations of open quantum systems; quantum noise and non-equilibrium effects.

Barrett Rogers (Ph.D., Massachusetts Institute of Technology, 1991)

Theoretical and computational plasma physics.

John R. Thorstensen (Ph.D., University of California, Berkeley, 1980)

Optical studies of close binary stars, astrometry.

Lorenza Viola (Ph.D., Padova, Italy, 1996)

Theoretical quantum information science and quantum statistical mechanics, open quantum systems and quantum control, entanglement, quantum many-body systems, non-equilibrium dynamics, quantum chaos, topological phases of matter.

Gary Wegner (Ph.D., University of Washington, 1971)

Cosmology, large-scale structure of the universe, end states of stellar evolution.

Kevin Wright (Ph.D., University of Rochester, 2009)

Ultra-cold quantum gases, strongly correlated quantum matter, quantum information, neutral atoms in optical lattices and cavities.

## Research Faculty

John Lyon (Ph.D., University of Maryland, 1972)

Space plasma physics and magnetospheric physics, numerical simulation and computational physics.

Hans Mueller (Ph.D., Dartmouth, 1997)

Theoretical space physics and astrophysics, physics of the outer heliosphere, interaction of solar and stellar mass-loss with the interstellar medium, numerical simulations.

