

CV for Gail C. McLaughlin

Gail C. McLaughlin

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Education

Ph.D. in physics: June 1996, University of California, San Diego
M.S. in Physics: December 1992, University of California, San Diego
A.B. Physics, Magna Cum Laude: June 1991, Princeton University

Positions

- Associate Professor of Physics, 2005 to present, North Carolina State University
- Assistant Professor of Physics, 2001 to 2005, North Carolina State University
- Research Scientist, SUNY Stony Brook, Physics 2000-2001
- Postdoctoral Research Associate, TRIUMF Theory Group, 1998-2000
- Postdoctoral Research Associate, University of Washington, 1996-1998

Awards, Fellowships, Consultantships, Memberships

- DOE Outstanding Junior Investigator Award, July 2002 to present
- Editorial Board, Journal of Physics G, 2005-present
- NSAC subcommittee for Implementation of the Long Range Plan 2005
- Executive Committee, APS Division of Nuclear Physics 2003-2005
- Nominating Committee, APS Division of Astrophysics 2003-2004
- Publications Committee, APS Division of Nuclear Physics 2003-2004
- NSAC Nuclear Theory Subcommittee 2003
- Program Committee, APS Division of Nuclear Physics 2002-2003
- Sloan Pre-Tenure Leave Fellowship 2003

Selected Publications

Prospects for detecting supernova neutrino flavor oscillations, Phys. Rev. D59, 085005 (1999), Fuller, G. M., Haxton, W. C. and McLaughlin, G. C.

Astrophysical implications of the induced neutrino magnetic moment from large extra dimensions, Phys. Lett. B470, 157 (1999), McLaughlin, G. C., and Ng, J. N.

An Active-Sterile Neutrino Transformation Solution for r-Process Nucleosynthesis, Phys. Rev. C59, 2873 (1999), McLaughlin, G. C., Fetter, J. M., Balantekin, A. B. & Fuller, G. M.

Nucleosynthesis and Neutrinos in Gamma Ray Bursts, Astrophys J., 603, 611 (2003), Surman, R. S. and McLaughlin, G. C.

On the Contribution of Gamma Ray Bursts to the Galactic Inventory of Some Intermediate Mass Proton-Rich Nuclei, *Astrophys. J.* L602, 101 (2003), Pruet, J., Surman, R. S. and McLaughlin, G. C.

Neutrino Conversion: Consequences for the r-process and Supernova Neutrino Detection, *Astropart. Phys.* **18** 433 (2003), Fetter, J., McLaughlin, G. C., Balantekin, A. B., and Fuller, G. M.

What can be Learned with a Lead-Based Supernova Neutrino Detector, *Phys. Rev. D* **67**, 013005 (2003), Engel, J., McLaughlin, G. C. and Volpe, C.

Prospects for Detecting a Neutrino Magnetic Moment, *Phys. Lett B* 591, 229 (2003), McLaughlin, G. C. and Volpe, C. R.

BBN and Λ_{QCD} , *Phys. Rev. D* **68** 103508 (2003), Kneller, J. P. and McLaughlin, G. C.
Neutrino nucleus cross section measurements using stopped pions and low energy beta beams *Phys. Rev. C* **70** (2004) 045804, McLaughlin, G. C.

Neutrino interactions in the outflow from gamma ray burst accretion disks, *Astrophys. J.* **618** 397 (2005), Surman, R. S. and McLaughlin, G. C.

Prospects for obtaining an r-process from Gamma Ray Burst Disk Winds, *Nucl. Phys.* **A758**, 189(2005), McLaughlin, G. C. and Surman, R. S.

'Nucleosynthesis in the Outflow from Gamma Ray Burst accretion disks *Astrophys. J.*, in press (2006), Surman, R. S. and McLaughlin, G. C. and Hix, W. R.

Neutrino scattering, absorption and annihilation above the accretion disks of gamma ray bursts *J. Phys. G.* in press (2006), Kneller, J., Surman, R. S. and McLaughlin, G. C.

What low-energy beta-beams can tell about supernova explosions, *Phys. Rev. Lett.*, submitted (2006) Jachowicz, N. and McLaughlin, G. C.

Monte Carlo Neutrino Oscillations *Phys. Rev D.*, submitted (2005), Kneller, J. and McLaughlin, G. C.

Selected Invited Talks, Lecture Series

Neutrino Oscillations, Invited Lectures, Summer Nuclear Institute on Nuclear Astrophysics, TRIUMF, Vancouver, BC June 2002

Neutrino Physics, Invited Lectures, National Nuclear Physics Summer School, Oak Ridge, TN, June 2003

Mixing of Quarks and Neutrinos, Invited Lectures, Summer Nuclear Institute on Particle Physics, TRIUMF, Vancouver, BC, July 2003

Neutrinos and Nucleosynthesis in Supernovae and Gamma Ray Bursts, Invited Talk, Nuclei in the Cosmos, Vancouver, BC, July 2004

Neutrino Astrophysics, Invited Lectures, HUGS, Jlab Newport News, VA, June 2005

Neutrino Astrophysics, Invited Lectures, Carpathian Summer School Mamia, Romania, June 2005

Neutrinos and the r-process Invited Talk, Division of Nuclear Physics of the APS, Maui, HI October 2005

Neutrino Scattering with Low Energy Beta Beams, Invited Talk at workshop on "The Future of Nuclear Physics at LANSCE" Los Alamos, NM July 2005