Gene E. Van Buren

curriculum vitae

Business Address:
STAR Experiment, Bldg. 510
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Marital Status: married
(wife Marie works at BNL)

Education

Massachusetts Institute of Technology Cambridge, MA
(August 1993-June 1998)
Ph.D. Physics (nuclear/particle) – thesis on strange quark matter search (strangelets) and antiproton measurement in central Au+Pt heavy ion collisions with E864 at the AGS at Brookhaven

Washington University Saint Louis, MO
(August 1989-May 1993)
B.S. Physics, B.S. Electrical Engineering, comprehensive minor in Computer Science

Honors

Tau Beta Pi *(1990-1993)*, Eta Kappa Nu *(1991-1993)*, Langsdorf Fellowship to Washington University *(1989-1993)*, Honorary Member of Tennessee State House of Representatives *(1989)*, DOE Science Students Honors Program on Superconductivity at Argonne National Lab *(1988)*

Research Experience

University of California at Los Angeles Los Angeles, CA
(August 1998-present) Postdoctoral Researcher Supervisor: Huan Huang
- Participating in the Strangeness Physics Working Group for the STAR Experiment.
- Contributing to the STAR software infrastructure efforts at BNL.
- Helped in testing of the TPC Gating Grid for the STAR Experiment.
- Analyzed data from E864 for antideuteron measurement in heavy ion collisions at the AGS.
- Provided various support for E941, a leading particle study of p+A collisions at the AGS.

MIT Laboratory for Nuclear Science Cambridge, MA
(June 1993-August 1998) Research Assistant Advisor: Irwin Pless
- Participated in design, construction and testing of the beam and multiplicity detectors for E864, and analyzed data for negatively charged strange quark matter search.
- Analyzed data for prompt muonic decay signature of charmed cosmic rays using the Large Volume Detector at Gran Sasso, Italy.

Washington University Radiochemistry Saint Louis, MO
(June 1992-June 1993) Research Assistant Advisor: Lee Sobotka
Helped assemble the MiniWall and Dwarf-Ball/Wall scintillation detectors, assisted in data-taking and first pass analysis in experiments studying multifragmentation and giant dipole resonances of nuclei in collisions at the National Superconducting Cyclotron Lab (at Michigan State University).

Notre Dame University South Bend, IN
(June 1991-August 1991) NSF Program for Undergraduates Advisor: Randy Ruchti
Worked on construction and testing techniques for a scintillating fiber tracking system with 25μm resolution for the Superconducting SuperCollider and the D0 Experiment at Fermilab.

Vanderbilt University Nashville, TN
- *(June 1990-August 1990) Lab Assistant* Advisor: Alan Barnes
  Assisted with construction of a small oxygen ion accelerator for bombardment surface physics studies in simulation of low earth orbit conditions for NASA's space station, and wrote interface software for data acquisition electronics.
- *(June 1989-August 1989) Lab Assistant* Advisor: Richard Haglund
  Assisted with vacuum and laser setups in two-photon excitation experiments.

Talks	"Antideuteron Yield and Coalescence Implications at the AGS," Quark Matter, Torino, Italy (1999)
	"Antideuteron Yield in 11.5 A GeV/c Au + Pt Collisions," APS Centennial, Atlanta (1999)
	"Negatively-Charged Strangelet Search Using the E864 Spectrometer at the AGS," Strangeness in Quark Matter, Padova, Italy (1998); J. Phys. G: Nucl. Part. Phys. **25**, 411 (1999)
Selected Publications	"Antideuteron yield at the AGS and coalescence implications," in progress for submission to Phys. Rev. Lett. (2000)
	"Mass Dependence of Light-Nucleus Production in Ultrarelativistic Heavy-Ion Collisions," Phys. Rev. Lett. **83**, 5431 (1999)
	"A Spectrometer for Study of High Mass Objects in Relativistic Heavy Ion Reactions," Nucl. Inst. and Meth. **A437**, 222 (1999)
	"Antiproton Production and Antideuteron Limits in Relativistic Heavy Ion Collisions," Phys. Rev. C **59**, 2699 (1999)
	"A 10MHz beam counter and a multiplicity detector for the E864 spectrometer," Nucl. Inst. and Meth. **A385**, 412 (1997)
	"Upper limit on prompt muon flux derived from the LVD underground experiment," Phys. Rev. D **60**, 112001 (1999)
	"Muon 'depth-intensity' relation measured by the LVD underground experiment and cosmic-ray muon spectrum at sea level," Phys. Rev. D **58**, 092005 (1998)
	"Investigating the Evolution of Multifragmenting Systems with Fragment Emission Order," Phys. Rev. Lett. **77**, 4508 (1996)
	"Time scale for proton emission from highly excited projectiles," Phys. Lett. **B323**, 113 (1994)
Other Experience	- Physics TA at Massachusetts Institute of Technology *(January 1997-May 1997)* - Computer Science TA at Washington University *(August 1990-December 1991)* - Self-employed web page designer *(July 1994-January 1995)*
Activities	Athletics have always been a major part of my life, with fitness a positive side-effect of the desire to enjoy and compete in sports. I played 14 seasons of soccer as a youth, ran five years of cross country and track through high school in addition to a recreational church basketball league. I played competitive intercollegiate racquetball and started volleyball while in undergraduate, and co-founded an MIT volleyball club which won the New England collegiate championships in its first year out. Today I keep up these activities as much as I can, playing on three BERA volleyball teams, the BERA racquetball club, ultimate frisbee at BNL in the summer, and running on my own. I also love getting away from it all, especially to the mountains – hiking, camping, and skiing.
Personal Statement	I consider myself a person with a wide range of interests and a wide range of skills, and the ability to do most of these things moderately well. This is why I enjoy experimental high energy physics so much: I have the opportunity to be a mathematician, a programmer, an engineer, and a scientist.

References

Prof. Huan Huang
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Knudsen 1-129, UCLA
Los Angeles, CA 90095-154705
(310) 825-9297

Prof. Jack Sandweiss
Dept. of Physics
Yale University
New Haven, CT 06520
(203) 432-3358

Prof. Irwin Pless
MIT 26-403
77 Massachusetts Ave.
Cambridge, MA 02139
(617) 253-2367

Other Publications

E864:

"Measurement of Light Nuclei Production in 11.5 A GeV/c Au + Pb Heavy-Ion Collisions," submitted to Phys. Rev. C (2000)

"Measurements of Neutrons in 11.5A GeV/c Au + Pb Heavy-Ion Collisions," Phys. Rev. C **60**, 064903 (1999)

"Large Straw-Tube Tracking Chambers for AGS Experiment E864," Nucl. Inst. and Meth. **A425**, 210 (1999)

"Search for Neutral Strange Quark Matter in High Energy Heavy Ion Collisions," Phys. Rev. C **59**, R1829 (1999)

"A High Mass Trigger for the E864 Experiment at the AGS Accelerator," Nucl. Inst. and Meth. **A421**, 431 (1999)

"Strangelet Searches, Light Nuclei and p-bar Production Measurements by AGS E864," Nucl. Phys. **A638**, 81c (1998)

"The E864 Lead-Scintillating Fiber Hadronic Calorimeter," Nucl. Inst. and Meth. **A406**, 227 (1998)

"Search for Exotic Strange Quark Matter in High Energy Nuclear Reactions," Nucl. Phys. **A625**, 494 (1997)

"Antiproton Production in 11.5 A GeV/c Au + Pb Nucleus-Nucleus Collisions," Phys. Rev. Lett. **79**, 3351 (1997)

"Search for Charged Strange Quark Matter Produced in 11.5A GeV/c Au + Pb Collisions," Phys. Rev. Lett. **79**, 3612 (1997)

"Strangelets, Antimatter and Coalescence: First Results from BNL E864," Nucl. Phys. **A610**, 297c (1996)

LVD:

"Study of the c.r. composition and interaction at E_0 = 10-100 TeV from the observation of H.E. muons and atmospheric Cherenkov Light in EAS," Nucl. Phys. **B75A**, 259 (1999)

Dwarf-Ball/ Wall at NSCL:

"Evolution of the giant dipole resonance in excited ^{120}Sn and ^{208}Pb nuclei populated by inelastic alpha scattering," Nucl. Phys. **A635**, 428 (1998)

"Giant Dipole Resonance and Excited ^{120}Sn and ^{208}Pb Nuclei Populated by Inelastic Alpha Scattering," Nucl. Phys. **A599**, 49c (1996)

"Temperature dependence of the giant dipole resonance width in ^{208}Pb," Phys. Lett. **B383**, 252 (1996)

MiniBall/Wall at NSCL:

"Fragment distributions for highly charged systems," Phys. Rev. C **55**, R2132 (1997); "Reply to 'Comment on "Fragment distributions...,"'" Phys. Rev. C **59**, 552 (1999)

"Fragment multiplicity dependent charge distributions in heavy ion collisions," Phys. Rev. C **55**, R557 (1997)

"Changing source characteristics during multifragment decay," Phys. Rev. C **53**, 2273 (1996)

"Assessing the Evolutionary Nature of Multifragment Decay," Phys. Rev. Lett. **75**, 1475 (1995)

"Energy dependence of multifragmentation in ^{84}Kr + ^{197}Au collisions," Phys. Rev. C **49**, R2271 (1994)