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)