Curriculum Vitae: Berndt Mueller

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Phone:	919-668-2728; FAX: 919-668-2729
Birthdate:	February 8, 1950, Markneukirchen (Germany)
Nationality:	U.S. citizen (naturalized)

Education:

M.S. (Diplom): Physics, 1972,
J.W. Goethe Universität, Frankfurt (Germany)

Ph.D. (Dr. phil. nat.): Theoretical Physics, 1973 (*summa cum laude*)
J.W. Goethe Universität, Frankfurt (Germany)

Employment and Professional Experience:

1999 – present: Dean of the Natural Sciences

1997 – 1999: Chair, Department of Physics

1996 – present: J.B. Duke Professor of Physics, Duke University

1990 – 96: Professor of Physics, Duke University

1976 – 89: Associate Professor, Universität Frankfurt, Germany

1974 – 75: Research Associate, University of Washington

1974: Postdoctoral Fellow, Yale University

1972 – 73: Research Assistant, Universität Frankfurt, Germany

Awards:

1998 Senior U.S. Scientist Award, A.v.Humboldt Foundation (Germany)

1994 Fellow APS, Fellow AAAS

1975 Röntgen Award, Universität Giessen (Germany)

Publications:

more than 240 refereed journal articles

16 monographs

Research Grant Support:

DOE research grant: *Quantum Chromodynamics and Nuclear Physics at Extreme Energy Densities* (since 1990, last competitive renewal 2001) with 4 co-PIs. Award: $1,115,000 over 3 years.

DOE equipment grant for 64-node PC cluster (2001) with 2 co-PIs. Award: $50,000.

ONR research grant: *A Medical Free Electron Laser Center* (Principal Investigator, 1997–99). Awards: $.....

NSF U.S. Japan Cooperative Research grant: *The QED Vacuum in Supercritical External Fields* (1994). Award: $4,750.

University Service:

2002 – 03: Steering Committee, President's Women's Initiative

2002 – 03: Administrative Task Force on Biological Anthropology and Anatomy

2001 – present: French Science Center Program Advisory Committee

2001: Task Force on Cognitive Psychology (*ex officio*)

2000 – 03: Genomics Steering Committee

2000 – present: University Liaison for Oak Ridge Nat. Lab.

1999 – 2000: Strategic Plan Steering Committee

1999: Task Force on Unification of Biology (*ex officio*)

1997 – 99: Principal Investigator, Medical Free Electron Laser Center (Duke Free Electron Laser Laboratory)

1997: Reappointment Committee for the Dean of Engineering

1995 – 96: Executive Committee, Arts and Sciences Council

Extramural Committee Activity:

2003: Chair, NSF/DOE NSAC Subcommittee on Nuclear Theory

2003 – present: MIT Lab. for Nuclear Studies Advisory Committee

2002: Chair, APS-DNP Nominations Committee

2001: Search Committee for Physical Review C Senior Editor

2001: UNC-CH Physics Department Review Committee

2001: Writing Group, NSF/DOE Long Range Plan for Nuclear Science

2000: Chair, Indiana Univ. Physics Department Review Committee

1998 – present: AGS/RHIC Program Advisory Committee, Brookhaven Nat. Lab.

1998 – 2003: Physics Division Review Committee, Los Alamos Nat. Lab.

1998 – 2001: Editorial Board, Physical Review C

1998 – 2000: Physics Division Review Committee, Oak Ridge Nat. Lab.

1997 – 2001: Editorial Board, Annual Reviews of Nuclear and Particle Science

1997: NSF Nuclear Theory Grant Review Panel

1996 – 98: Executive Committee, APS Division of Nuclear Physics

1996 – 97: Fellowship Committee, APS Division of Nuclear Physics

1996: NSF Special Emphasis Panel on Nuclear Physics

1995 – 98: Nat. Advisory Committee, Inst. for Nuclear Theory (Chair 97/98)

1995: Writing Group Chair, DOE/NSF Long Range Plan for Nuclear Science

1994 – 98: Steering Committee, NSF Nuclear Physics Summer School

1992 – 96: Physics Department Visiting Committee, Brookhaven Nat. Lab.

1992 – 95: NSF/DOE Nuclear Science Advisory Committee

1992 – 94: Divisional Associate Editor, Physical Review Letters

Names of Graduate and Postdoctoral Advisors:

Graduate advisor: W. Greiner, (U. Frankfurt, Germany)

Postdoctoral advisors: D.A. Bromley (Yale U.), L. Wilets (U. of Washington)

Names of Advisees (since 1990):

Graduate students: J. Rau (Ph.D. 1993), C. Gong (Ph.D. 1994), M. Strickland (Ph.D. 1996) C.R. Hu (Ph.D. 1998), G. Doki.

Postdoctoral associates: S.A. Bass, C. Greiner, R.J. Fries, K. Kinder-Geiger, P. Levai, S.B. Liao, W. Pöschl, D. Rischke, A.J. Schramm, X.N. Wang.

Book Publications:

The physics of the quark-gluon plasma, Lecture Notes in Physics (Springer-Verlag) 225 (1985) 142 pp.

The Structured Vacuum - Thinking about Nothing, Verlag Harri Deutsch (Frankfurt am Main, 1985), 198 pp. (with J. Rafelski).

Quantum electrodynamics of strong fields, Springer-Verlag (Berlin-Heidelberg, 1985), 594 pp. (with W. Greiner and J. Rafelski).

Quantum mechanics II: Symmetries, Springer-Verlag (Berlin-Heidelberg-New York, 1994), 496 pp. (with W. Greiner).

Gauge Theory of Weak Interactions, 3rd edition, Springer-Verlag (Berlin-Heidelberg-New York, 2000), 402 pp. (with W. Greiner).

Neural networks: An Introduction, Second edition, Springer-Verlag (Berlin-Heidelberg-New York, 1990, 1995), 329 pp. (with J. Reinhardt and M. T. Strickland).

Vacuum structure in intense fields, NATO- ASI Series B: Physics Vol. 255, Plenum Press (New York, 1991), 443 pp. (edited, with H. M. Fried).

QCD Vacuum Structure, World Scientific (Singapore, 1993), 368 pp. (edited, with H. M. Fried).

Quantum Infrared Physics, World Scientific (Singapore, 1995), 537 pp. (edited, with H. M. Fried).

Chaos and Gauge Field Theory, World Scientific (Singapore, 1995), 288 pp. (with T. S. Biró and S. G. Matinyan).

Quantum Chromodynamics: Collisions, Confinement, and Chaos, World Scientific (Singapore, 1997), 414 pp. (edited, with H. M. Fried).

Quantum Chromodynamics, World Scientific (Singapore, 1999), 473 pp. (edited, with H. M. Fried).

RHIC Physics and Beyond – Kay Kay Gee Day, AIP Conference Proceedings 482 (Woodbury, 1999), 167 pp. (with R. D. Pisarski).

Quantum Chromodynamics, World Scientific (Singapore, 2000), 385 pp. (edited, with H. M. Fried).

Non-Perturbative QCD, World Scientific (Singapore, 2002), 408 pp. (edited, with H. M. Fried).

Quark-Gluon Plasma: Theoretical Foundations (An Annotated Reprint Volume), Cambridge University Press (Cambridge, 2003, in print), ca. 650 pp. (with J. I. Kapusta and J. Rafelski).

Ten Most Cited Journal Publications:

M. Asakawa, U. W. Heinz and B. Müller, "Fluctuation probes of quark deconfinement," Phys. Rev. Lett. **85**, 2072 (2000) [arXiv:hep-ph/0003169].

S. G. Matinian and B. Müller, "A model of charmonium absorption by light mesons," Phys. Rev. C **58**, 2994 (1998) [arXiv:nucl-th/9806027].

J. W. Harris and B. Müller, "The search for the quark-gluon plasma," Ann. Rev. Nucl. Part. Sci. **46**, 71 (1996) [arXiv:hep-ph/9602235].

K. J. Eskola, B. Müller and X. N. Wang, "Screening of initial parton production in ultrarelativistic heavy-ion collisions," Phys. Lett. B **374**, 20 (1996) [arXiv:hep-ph/9509285].

S. Gavin and B. Müller, "Larger domains of disoriented chiral condensate through annealing," Phys. Lett. B **329**, 486 (1994) [arXiv:hep-ph/9312349].

T. S. Biro, E. van Doorn, B. Müller, M. H. Thoma and X. N. Wang, "Parton equilibration in relativistic heavy ion collisions," Phys. Rev. C **48**, 1275 (1993) [arXiv:nucl-th/9303004].

K. Geiger and B. Müller, "Dynamics of parton cascades in highly relativistic nuclear collisions," Nucl. Phys. B **369**, 600 (1992).

G. Plunien, B. Müller and W. Greiner, "The Casimir Effect," Phys. Rept. **134**, 87 (1986).

P. Koch, B. Müller and J. Rafelski, "Strangeness In Relativistic Heavy Ion Collisions," Phys. Rept. **142**, 167 (1986).

J. Rafelski and B. Müller, "Strangeness Production In The Quark - Gluon Plasma," Phys. Rev. Lett. **48**, 1066 (1982) [Erratum-ibid. **56**, 2334 (1986)].

Ten Most Recent Publications:

S. A. Bass, B. Müller and D. K. Srivastava, "Net baryon density in Au + Au collisions at the Relativistic Heavy Ion Collider," Phys. Rev. Lett. **91** (in press) [arXiv:nucl-th/0212103].

S. A. Bass, B. Müller and D. K. Srivastava, "Semi-hard scattering of partons at SPS and RHIC: A study in contrast," Phys. Rev. C **66**, 061902 (2002) [arXiv:nucl-th/0210042].

S. A. Bass, B. Müller and D. K. Srivastava, "Light from cascading partons in relativistic heavy-ion collisions," Phys. Rev. Lett. **90**, 082301 (2003) [arXiv:nucl-th/0209030].

B. Müller, "Phenomenology of jet quenching in heavy ion collisions," Phys. Rev. C **67**, 061901 (2003) [arXiv:nucl-th/0208038].

R. J. Fries, B. Müller and D. K. Srivastava, "High energy photons from passage of jets through quark gluon plasma," Phys. Rev. Lett. **90**, 132301 (2003) [arXiv:nucl-th/0208001].

S. A. Bass, B. Müller and D. K. Srivastava, "Parton rescattering and screening in Au + Au collisions at RHIC," Phys. Lett. B **551**, 277 (2003) [arXiv:nucl-th/0207042].

G. R. Shin and B. Müller, "A relativistic parton cascade with radiation," J. Phys. G **28**, 2643 (2002) [arXiv:nucl-th/0207041].

B. Müller, "Statistical fluctuations as probes of dense matter," Nucl. Phys. A **702**, 281 (2002) [arXiv:nucl-th/0111008].

B. Müller, "The anthropic principle revisited," In Gürzadyan, V.G. (ed.) et al.: *From integrable models to gauge theories* (World Scientific, Singapore, 2002) p. 251-260 [arXiv:astro-ph/0108259].

T. S. Biro, S. G. Matinyan and B. Müller, "Chaotic quantization of classical gauge fields," Found. Phys. Lett. **14**, 471 (2001) [arXiv:hep-th/0105279].