CURRICULUM VITAE (ABBREVIATED)

SERGE RUDAZ

SCHOOL OF PHYSICS AND ASTRONOMY
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN 55455
telephone: (612) 624-5022
fax: (612) 624-4578
e-mail: rudaz@mnhep.hep.umn.edu

Date of birth: 19 August, 1954
Married, two children

Education and Experience

Education: Ph. D., Cornell University, 1979
M. S., Cornell University, 1979

Positions: Professor, University of Minnesota, 1987-present
Visiting Professor, Universite de Paris XI, Orsay, 1994-1995
Associate Professor, University of Minnesota, 1985-1987
Assistant Professor, University of Minnesota, 1981-1985
Research Fellow in Theoretical Physics, CERN, Geneva, 1979-1981

Professional Activities and Honors

Honors: IT Best Instructor Award, IT Student Board, U. of Minnesota, May 1998
Elected Fellow of the American Physical Society, 1995
(Citation: "For original and influential contributions to the phenomenology of heavy quarks, supersymmetry and grand unification, and particle astrophysics")
Outstanding Instructor Award, IT Student Board, University of Minnesota, May 1992
Herzberg Medal (Canadian Association of Physicists), 1985
Presidential Young Investigator Award, 1984

Societies: American Physical Society
Institute of Particle Physics (Canada)

Other: Member, Organizing Committee, APS-DPF-96 Meeting,
Minneapolis, 1996
Member of Governing Board, Lewes Center for Physics, 1985-1988
Consultant, Particle Data Group, 1986-present
Chairman, Organizing Committee, Sixth Workshop on Grand Unification,
Minneapolis, April 1995

Selected Publications

"The Phenomenology of the Next Left-Handed Quarks" (with J. Ellis, M. K. Gaillard and D. V. Nanopoulos) Nuclear Physics B**131**, 285 (1977)

"A New Potential for Quarkonium" (with G. Bhanot) Physics Letters B**78**, 119 (1978)

"On the Suppression of Monopole Production in the Very Early Universe" (with F.A. Bais) Nuclear Physics B**170**, 507 (1980)

"Search for Supersymmetry in Toponium Decays" (with J. Ellis) Physics Letters B**128**, 248 (1983)

"Non-Standard Fermion Mass Matrices and Nucleon Decay" (with D. B. Reiss) Physical Review D**30**, 118 (1984)

"Constituent Gluons and a New Mechanism for Radiative Weak Decays of Hyperons" (with M. K. Gaillard and X. Q. Li) Physics Letters B**158**, 158 (1985)

"Galactic Antiprotons from Photinos" (with F. Stecker and T. Walsh) Physical Review Letters **55**, 2622 (1985)

"Pseudo-Goldstone Bosons in Curved Space-Time" (with Y. Hosotani and M. Nikolic) Physical Review D**34**, 627 (1986)

"Cosmic Production of Quarkonium ?" Physical Review Letters **56**, 2128 (1986)

"Re-examination of the Standard Model in the light of B^o-anti-B^o Mixing" (with J. Ellis and J. S. Hagelin) Physics Letters B**192**, 201 (1987)

"Annihilation of Heavy Neutral Fermion Pairs into Monochromatic Gamma Rays and its Astrophysical Implications" Physical Review D **39**, 3549 (1989)

"Possibilities for Fundamental Particle/Astrophysics Experiments at a Lunar Base", in First NASA Workshop on Physics and Astrophysics from a Lunar Base, Stanford 1989, A. E. Potter and T. L. Wilson, eds. (AIP, New York, 1990) p. 217

"Electric Charge Quantization in the Standard Model" Physical Review D**41**, 2619 (1990)

"Note on Asymptotic Series Expansions for the Derivative of the Hurwitz Zeta Function and Related Functions" Journal of Mathematical Physics **31**, 2832 (1990)

"On the Observability of the Gamma-Ray Line Flux from Dark Matter Annihilation" (with F. Stecker) Astrophysical Journal **368**, 406 (1991)

"A Modified Relativistic Hartree Approximation to the Nuclear Matter Equation of State" (with E. K. Heide) Physics Letters B**262**, 375 (1991)

"Implications of a Modified Glueball Potential for Nuclear Matter" (with P. J. Ellis and E. K. Heide) Physics Letters B**293**, 259 (1992)

"On the Production of Flux Vortices and Magnetic Monopoles in Phase Transitions" (with A. M. Srivastava) Modern Physics Letters A**8**, 1443 (1993)

"Remarks on a Possible Leptonic Decay Mode of the Proton" in The Fermilab Meeting, DPF-92, C. Albright, P. Kasper, R. Raja and J. Yoh, eds. (World Scientific, Singapore, 1993) p. 1339

"An Effective Lagrangian with Broken Scale and Chiral Symmetry Applied to Nuclear Matter and Finite Nuclei" (with P. J. Ellis and E. K. Heide) Nuclear Physics A**571**, 713 (1994)

"Single Leptoquark Production at Hadron Colliders" (with J. Ohnemus, T. Walsh and P. Zerwas) Physics Letters B**334**, 203 (1994)

"$a_1(1260)$ contributions to photon and dilepton production from Hot Hadronic Matter: Revisited" (with J. K. Kim, P. Ko and K. Y. Lee) Physical Review D**53**, 4787 (1996)

Recent Invited Talks and Seminars

Aspen Winter Physics Conference, Aspen, Colorado, January 1994
"New Approach to the Chiral Dynamics of the a_1 Meson"

Workshop on Quantum Infrared Physics, Paris, France, June 1994
"Explicit Chiral Symmetry Breaking in Media"

CEN-Saclay, Service de Physique Theorique, Saclay, France, November 1994
"Chiral Dynamics in Hot and Dense Media" (in french)

LPTHE-Orsay, Universite de Paris XI, Orsay, France, November 1994
"A light scalar partner for the top quark and supersymmetry" (in french)

XXXth Rencontre de Moriond, Les Arcs, France, March 1995
" Remarks on light stop phenomenology"

Universite de Lausanne, Lausanne, Switzerland, April 1995
"From the Standard Model to Supersymmetry: Twenty Years of Particle Physics"
(Colloquium, in french)

McGill University, Montreal, Canada, September 1996
"Applied Chiral Dynamics: From Hadrons to Nuclei"

Recent Outside Lecture Courses (Graduate and Post-Graduate)

Advanced Study Institute on Techniques and Concepts in High Energy Physics, St. Croix, U.S. Virgin Islands, July 1992 - "Scalar Fields in Particle Physics and Cosmology" (five lectures)

1993 Summer School in High Energy Physics and Cosmology, International Center for Theoretical Physics, Trieste, Italy, June 1993 - "Introduction to Quantum Chromodynamics and Chiral Lagrangians" (six lectures)

1996 Summer School in High Energy Physics and Cosmology, International Center for Theoretical Physics, Trieste, Italy, July 1996 - "Introduction to Gauge Field Quantization" (five lectures)

Course Development at the University of Minnesota

- A new graduate course on "Modern Quantum Field Theory and its Applications", Physics 8381-8382-8383 (three quarter sequence) formally added to the Graduate School Bulletin of offered course, 1984

- A one quarter course on Special Relativity for undergraduates, Physics 3601,
- formally added to the Institute of Technology Bulletin of offered courses, 1991

- Revision of the IT Honors Physics Introductory Sequence (four quarters, Physics 1451-1452-1453-1454) and its associated laboratory experiments, in progress (1995-1998)