Paul B. Mackenzie

Current Position
Scientist III.
Theoretical Physics Department.
Fermi National Accelerator Laboratory.

Education
Ph.D. Physics, Cornell University, 1981 (Advisor, Peter Lepage).
B.S. Physics and Mathematics, University of Illinois, Summa Cum Laude, 1975.

Previous Positions
Scientist I, II, Fermi National Accelerator Laboratory, 1990-2008.
Associate Scientist, Fermi National Accelerator Laboratory, 1986-1990.
Member, Institute for Advanced Study, 1984-1986.
Research Associate, Fermi National Accelerator Laboratory, 1981-1984.

Visiting Positions
Center for Computational Physics, Tsukuba, 6/1996-9/1996.
Institute for Nuclear Theory, Seattle, 6/1993-7/1993.
Institute for Theoretical Physics, Santa Barbara, 8/1990-12/1990.

Professional Activities
USQCD Executive Committee, 1999-present; chair, 2009-present.
Fermilab Committee on Scientific Appointments, 2002-2005.
International Advisory Committee, International Symposia on Lattice Field Theory:

- Lattice 07, Regensburg, 2007.
- Lattice 03, Tuskuba, 2003.
- Lattice 96, St. Louis, 1996.
- Lattice 93, Dallas, 1993.
- Lattice 90, Tallahassee, 1990.
- Lattice 89, Capri, 1989.

Organizing Committee:

- Lattice 04, Fermilab, 2004.
- Aspen Center for Physics Summer Workshop, Aspen, 1997.
- Aspen Center for Physics Winter Workshop, Aspen, 1995.
- Program on Lattice Gauge Theory, Institute for Theoretical Physics, Santa Barbara, 1990.
- Lattice 88, Fermilab, 1988.

Honors and Awards
Phi Beta Kappa, 1975.
Fellow, American Physical Society, 1996.
Fellow, American Association for the Advancement of Science, 2011.

Selected Publications

- J. A. Bailey *et al.*, "The $B \to \pi \ell \nu$ semileptonic form factor from three-flavor lattice QCD: A Model-independent determination of $|V_{ub}|$," Phys. Rev. D **79**, 054507 (2009) [arXiv:0811.3640 [hep-lat]].
- C. Bernard *et al.*, "The $\bar{B} \to D^* \ell \bar{\nu}$ form factor at zero recoil from three-flavor lattice QCD: A Model independent determination of $|V_{cb}|$," Phys. Rev. D **79**, 014506 (2009) [arXiv:0808.2519 [hep-lat]].
- C. Aubin *et al.*, "Charmed meson decay constants in three-flavor lattice QCD," Phys. Rev. Lett. **95**, 122002 (2005) [arXiv:hep-lat/0506030].
- C. Aubin *et al.* [Fermilab Lattice Collaboration], "Semileptonic decays of D mesons in three-flavor lattice QCD," Phys. Rev. Lett. **94**, 011601 (2005) [arXiv:hep-ph/0408306].
- C. T. H. Davies *et al.*, "High-precision lattice QCD confronts experiment," Phys. Rev. Lett. **92**, 022001 (2004) [arXiv:hep-lat/0304004].
- S. Hashimoto, A. X. El-Khadra, A. S. Kronfeld, P. B. Mackenzie, S. M. Ryan and J. N. Simone, "Lattice QCD calculation of anti-B → D l anti-nu decay form factors at zero recoil," Phys. Rev. D **61**, 014502 (2000) [arXiv:hep-ph/9906376].
- A. X. El-Khadra, A. S. Kronfeld and P. B. Mackenzie, "Massive fermions in lattice gauge theory," Phys. Rev. **D55**, 3933 (1997) [hep-lat/9604004].
- G. P. Lepage and P. B. Mackenzie, "On the viability of lattice perturbation theory," Phys. Rev. **D48**, 2250 (1993) [hep-lat/9209022].
- A. X. El-Khadra, G. Hockney, A. S. Kronfeld and P. B. Mackenzie, "A Determination of the strong coupling constant from the charmonium spectrum," Phys. Rev. Lett. **69**, 729 (1992).
- P. B. Mackenzie and G. P. Lepage, "QCD corrections to the gluonic width of the upsilon meson," Phys. Rev. Lett. **47**, 1244 (1981).

Summer School Lectures

"QCD on the Lattice", V Seminario Nazionale di Fisica Teorica, Parma, Italy, 1996. Five lectures.

"QCD on the Lattice", Theoretical Advanced Study Institute In Elementary Particle Physics, Boulder, Colorado, 1995. Five lectures.

"Heavy Quarks on the Lattice", Fifteenth U. K. Institute for Theoretical High Energy Physics, Southampton, 1994. Five lectures.

"Standard Model Phenomenology Using Lattice QCD", Uehling Summer School, Institute for Nuclear Theory, Seattle, 1993. Five lectures.

"Machines for Lattice Gauge Theory", Theoretical Advanced Study Institute In Elementary Particle Physics, Boulder, Colorado, 1987. One lecture.

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