1134-81-225 **Michel L. Lapidus*** (lapidus@math.ucr.edu), University of California, Department of Mathematics, Riverside, CA 92521-0135. *The Feynman Integral and Feynman's Operational Calculus, Revisited: Open Problems and a Short Overview (in Memory of Gerald W. Johnson).*

Our goal in this talk is to present and discuss aspects of two closely related but different subjects; namely, the Feynman path integral and Feynman's operational calculus for noncommuting operators. Emphasis will be placed on a few operator-theoretic and probabilistic approaches as well as on several (often very difficult) open problems.

The main references for this presentation, from the perspective chosen in this talk, are the following two books:

Gerald W. Johnson and Michel L. Lapidus, The Feynman Integral and Feynman's Operational Calculus, Oxford Mathematical Monographs, Oxford University Press, Oxford and New York, 2000 (paperback edition, 2002); approx. 800 pages.

Gerald W. Johnson, Michel L. Lapidus and Lance Nielsen, Feynman's Operational Calculus and Beyond: Noncommutativity and Time-Ordering, Oxford Mathematical Monographs, Oxford University Press, 2015 (approx. 400 pages).

This talk is dedicated to the memory of the presenter's long-time friend and collaborator, Gerald (Jerry) W. Johnson. (Received September 06, 2017)