

BIOGRAPHICAL SKETCH

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NAME OF SPONSOR (CO-SPONSOR) John M. Coffin		POSITION TITLE American Cancer Society Research Professor	
eRA COMMONS USER NAME johncoffin1			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Wesleyan University, Middletown CT	BA	1967	Biology
University of Wisconsin, Madison WI	Ph.D.	1972	Molecular Biology
Institut für Molekularbiologie, University of Zürich		1972-1975	Molecular Virology

A. Positions and Honors

Professional Experience:

1972-1975 Postdoctoral Fellow, Institut für Molekularbiologie, Universität Zürich
1975-1978 Assistant Professor, Molecular Biology and Microbiology, Tufts University School of Medicine
1978-1982 Associate Professor, Molecular Biology and Microbiology, Tufts University School of Medicine
1982-present Professor, Molecular Biology and Microbiology, Tufts University School of Medicine
1985-1994 American Cancer Society, Massachusetts Division, Professor of Molecular Biology
1994-present American Cancer Society Research Professor of Molecular Biology and Microbiology
2002-present Distinguished Professor, Tufts University
1997-2005 Director, HIV Drug Resistance Program, National Cancer Institute, Frederick MD

Honors and Service

Fellow, Jane Coffin Childs Memorial Fund for Medical Research, 1972-74
Editorial Boards: J. Virol. 1978-1991, Virology, 1980-1993, Genes and Development, 1991-1994, PNAS, 2000-
Editor, Journal of Virology, 1991-1997
Virology Study Section, 1980-1984
Organizer, Cold Spring Harbor meeting on RNA Tumor Viruses, 1981, 1991, 1997
Member, Retrovirus subsection, International Committee on the Taxonomy of Viruses, 1982-1987, Chair, 1987-95
Member, California AIDS Task Force, Basic Science Review Group, 1986-97, Chair 1993-97
Member, Leukemia Society of America, Grant Review Subcommittee, 1987-1991; 1992-2000, Chair 1997-2000
Member, Leukemia Society of America, National Board of Trustees, 1987-1991, 1992-2004
Member, National Cancer Institute Manpower Initial Review Group, 1987-1991
Outstanding Investigator Award, National Institutes of Health, 1987-1994; 1994-2001
Reviewing Editor, Science, 1987- 1996
American Society for Microbiology Foundation Lecturer, 1988-1989
Member, Institute of Medicine Committee to Study the AIDS Research Program of the NIH, 1989-1991
Milton and Natalie Zucker Award for Research, 1989, 1997
Member, Pediatric AIDS Foundation Ariel Project, Board of Scientific Councilors.

Member, National Cancer Institute-Frederick Cancer Research & Development Center Advisory Committee, 1993-1997
Fellow, American Academy of Microbiology, 1993-present
Member, Panel to Assess the NIH Investment in Gene Therapy, 1995
Distinguished Faculty Award, Tufts University, 1997
Member, National Academy of Sciences, 1999-
Massachusetts Columbus Quincentennial Discovery Award, 2006
Member, Massachusetts Academy of Sciences, 2008-

B. Selected Publications (from over 250)

Coffin, J. M. 1995. HIV population dynamics in vivo: implications for genetic variation, pathogenesis, and therapy. *Science* **267**:483-489. PMC

Rouzine, I. M., A. Rodrigo, and J. M. Coffin. 2001. Transition between stochastic evolution and deterministic evolution in the presence of selection: general theory and application to virology. *Microbiol Mol Biol Rev* **65**:151-185. PMC 99023

Palmer, S., A. P. Wiegand, F. Maldarelli, H. Bazmi, J. M. Mican, M. Polis, R. L. Dewar, A. Planta, S. Liu, J. A. Metcalf, J. W. Mellors, and J. M. Coffin. 2003. New real-time reverse transcriptase-initiated PCR assay with single-copy sensitivity for human immunodeficiency virus type 1 RNA in plasma. *J Clin Microbiol* **41**:4531-4536. PMC 254331

Rouzine, I. M., J. Wakeley, and J. M. Coffin. 2003. The solitary wave of asexual evolution. *Proc Natl Acad Sci U S A* **100**:587-592. PMC 141040

Hughes, J. F., and J. M. Coffin. 2004. Human endogenous retrovirus K solo-LTR formation and insertional polymorphisms: implications for human and viral evolution. *Proc Natl Acad Sci U S A* **101**:1668-1672. PMC 341815

Yu, Q. König, R., Pillai, S., Chiles, K., Kearney, M., Palmer, S., Richman, D., Coffin, J.M., and Landau, N.R. 2004. Single-strand specificity of APOBEC3G accounts for minus-strand deamination of the HIV genome. *Nat. Struct. Mol. Biol.* **5**: 535-542.

Palmer, S., M. Kearney, F. Maldarelli, E. K. Halvas, C. J. Bixby, H. Bazmi, D. Rock, J. Falloon, R. T. Davey, Jr., R. L. Dewar, J. A. Metcalf, S. Hammer, J. W. Mellors, and J. M. Coffin. 2005. Multiple, linked human immunodeficiency virus type 1 drug resistance mutations in treatment-experienced patients are missed by standard genotype analysis. *J Clin Microbiol* **43**:406-413. PMC 540111

Palmer, S., V. Boltz, F. Maldarelli, M. Kearney, E. K. Halvas, D. Rock, J. Falloon, R. T. Davey, Jr., R. L. Dewar, J. A. Metcalf, J. W. Mellors, and J. M. Coffin. 2006. Selection and persistence of non-nucleoside reverse transcriptase inhibitor-resistant HIV-1 in patients starting and stopping non-nucleoside therapy. *AIDS* **20**:701-710. PMC

Jern, P., J. P. Stoye, and J. M. Coffin. 2007. Role of APOBEC3 in genetic diversity among endogenous murine leukemia viruses. *PLoS Genet* **3**:2014-2022. PMC 2041998

Maldarelli, F., S. Palmer, M. S. King, A. Wiegand, M. A. Polis, J. Mican, J. A. Kovacs, R. T. Davey, D. Rock-Kress, R. Dewar, S. Liu, J. A. Metcalf, C. Rehm, S. C. Brun, G. J. Hanna, D. J. Kempf, J. M. Coffin, and J. W. Mellors. 2007. ART suppresses plasma HIV-1 RNA to a stable set point predicted by pretherapy viremia. *PLoS Pathog* **3**:e46. PMC 1847689

Palmer, S., F. Maldarelli, A. Wiegand, B. Bernstein, G. J. Hanna, S. C. Brun, D. J. Kempf, J. W. Mellors, J.

- M. Coffin, and M. S. King. 2008. Low-level viremia persists for at least 7 years in patients on suppressive antiretroviral therapy. *Proc Natl Acad Sci U S A* **105**:3879-3884. PMC 2268833
- Dinoso, J. B., S. Y. Kim, A. M. Wiegand, S. E. Palmer, S. J. Gange, L. Cranmer, A. O'Shea, M. Callender, A. Spivak, T. Brennan, M. F. Kearney, M. A. Proschan, J. M. Mican, C. A. Rehm, J. M. Coffin, J. W. Mellors, R. F. Siliciano, and F. Maldarelli. 2009. Treatment intensification does not reduce residual HIV-1 viremia in patients on highly active antiretroviral therapy. *Proc Natl Acad Sci U S A* **106**:9403-9408. PMC 2685743
- Kearney, M., F. Maldarelli, W. Shao, J. B. Margolick, E. S. Daar, J. W. Mellors, V. Rao, J. M. Coffin, and S. Palmer. 2009. Human immunodeficiency virus type 1 population genetics and adaptation in newly infected individuals. *J Virol* **83**:2715-2727. PMC 2648286
- Mens, H., M. Kearney, A. Wiegand, W. Shao, K. Schonning, J. Gerstoft, N. Obel, F. Maldarelli, J. W. Mellors, T. Benfield, and J. M. Coffin. 2010. HIV-1 continues to replicate and evolve in patients with natural control of HIV infection. *J Virol* **84**:12971-12981. PMC 3004307
- Paprotka, T., K. A. Delviks-Frankenberry, O. Cingoz, A. Martinez, H. J. Kung, C. G. Tepper, W. S. Hu, M. J. Fivash, Jr., J. M. Coffin, and V. K. Pathak. 2011. Recombinant origin of the retrovirus XMRV. *Science* **333**:97-101. PMC 3278917
- Subramanian, R. P., J. H. Wildschutte, C. Russo, and J. M. Coffin. 2011. Identification, characterization, and comparative genomic distribution of the HERV-K (HML-2) group of human endogenous retroviruses. *Retrovirology* **8**:90. PMC 3228705
- Boltz, V. F., Z. Ambrose, M. F. Kearney, W. Shao, V. N. Kewalramani, F. Maldarelli, J. W. Mellors, and J. M. Coffin. 2012. Ultrasensitive allele-specific PCR reveals rare preexisting drug-resistant variants and a large replicating virus population in macaques infected with a simian immunodeficiency virus containing human immunodeficiency virus reverse transcriptase. *J Virol* **86**:12525-12530. PMC 3497681
- Henzy, J. E., and J. M. Coffin. 2013. Betaretroviral envelope subunits are noncovalently associated and restricted to the mammalian class. *J Virol* **87**:1937-1946. PMC 3571459
- Kearney, M. F., J. Spindler, W. Shao, S. Yu, E. M. Anderson, A. O'Shea, C. Rehm, C. Poethke, N. Kovacs, J. W. Mellors, J. M. Coffin, and F. Maldarelli. 2014. Lack of Detectable HIV-1 Molecular Evolution during Suppressive Antiretroviral Therapy. *PLoS Pathog* **10**:e1004010. PMC 3961343
- Bhardwaj, N., F. Maldarelli, J. Mellors, and J. M. Coffin. 2014. HIV-1 infection leads to increased transcription of human endogenous retrovirus HERV-K (HML-2) proviruses in vivo but not to increased virion production. *J Virol* **88**:11108-11120.
- Bhardwaj, N., M. Montesion, F. Roy, and J. M. Coffin. 2015. Differential expression of HERV-K (HML-2) proviruses in cells and virions of the teratocarcinoma cell line Tera-1. *Viruses* **7**:939-968. PMC PMC4379556
- Maldarelli, F., X. Wu, L. Su, F. R. Simonetti, W. Shao, S. Hill, J. Spindler, A. L. Ferris, J. W. Mellors, M. F. Kearney, J. M. Coffin, and S. H. Hughes. 2014. HIV latency. Specific HIV integration sites are linked to clonal expansion and persistence of infected cells. *Science* **345**:179-183. PMC 4262401
- Simonetti, F. R., M. D. Sobolewski, E. Fyne, W. Shao, J. Spindler, J. Hattori, E. M. Anderson, S. A. Watters, S. Hill, X. Wu, D. Wells, L. Su, B. Luke, E. K. Halvas, G. Besson, K. J. Penrose, Z. Yan, R. W. Kwan, C. Van Waes, T. Uldrick, D. Citrin, J. Kovacs, M. Polis, C. Rehm, R. Gorelick, M. Piatak Jr, B. Keele, Kearney M.F., J. M. Coffin, S. H. Hughes, J. W. Mellors, and F. Maldarelli. 2015. Clonally Expanded CD4+ T-Cells Can Produce Infectious HIV-1 in vivo. *Proc. Natl. Acad. Sci. USA In Press*
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