CURRICULUM VITAE 10/8/14

EDWARD LEON LOECHLER

Professor

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PERSONAL

Date of Birth	November 21, 1948	Citizenship	USA
Place of Birth	Columbus, Ohio		
Family	Leslie, Lee (24 yrs), Rebecca (21 yrs)		

EDUCATION

Ohio State University	B.S.	Chemistry (1970)	Advisor: Jack Hine
Brandeis University	Ph.D.,	Biochemistry (1979)	Advisor: Thomas Hollocher

PROFESSIONAL EMPLOYMENT

1979-1981	M.I.T., Department of Biology, Cambridge, MA Postdoctoral Fellow (Jonathan King)
1981-1984	M.I.T., Laboratory of Toxicology, Cambridge, MA Postdoctoral Fellow, Postdoctoral Associate (John Essigmann)
1984-1990	Boston University, Department of Biology, Boston, MA Assistant Professor
1990-1996	Boston University, Department of Biology, Boston, MA Associate Professor
1993-2003	Boston University, Program in Biochemistry and Molecular Biology Director
1996-	Boston University, Department of Biology, Boston, MA Professor

RESEARCH INTERESTS

Molecular Biology
Chemical, biochemical and genetic mechanisms of mutagenesis and carcinogenesis
Mechanism of action of cancer chemotherapeutic agents
Molecular modeling/Computational chemistry

PROFESSIONAL SOCIETIES, EDITORIAL BOARDS, REVIEW PANELS, AWARDS AND HONORS

Editorial Board, *Mutation Research* (1998 - 2005)
Editorial Board, *Chemical Research in Toxicology* (2000 - 2003)
Editorial Board, *Carcinogenesis* (1994 - 1996)
Member, Radiation Therapeutics and Biology Study Section, National Institutes of Health (2009)
Member, Oncology Fellowship Area Study Section, National Institutes of Health (2006 - 2007)
Member, Chemical Pathology Study Section, National Institutes of Health (1995 - 2001)
Member, American Cancer Society Advisory Committee on Carcinogenesis and Nutrition (1989 - 1994)
Chair, Gordon Research Conference: DNA Damage, Mutations and Cancer (2002)
NIH Postdoctoral Fellowship (M.I.T.)
NIH Predoctoral Fellowship (Brandeis University)
Nominee, Metcalf Award for Excellence in Teaching (1994, 2004)

PUBLICATIONS (Research Papers: Organic Reaction Mechanisms)

Loechler, E.L. and Hollocher, T.C. (1975) Mechanism of the Reaction of Dithiols with Flavins. *J. Am. Chem. Soc.* 97, 3235 - 3237.

Loechler, E.L. and Hollocher, T.C. (1980) Reduction of Flavins by Thiols. 1. Reaction Mechanism from the Kinetics of the Attack and Breakdown Steps. *J. Am. Chem. Soc.* 102, 7312 - 7321.

Loechler, E.L. and Hollocher, T.C. (1980) Reduction of Flavins by Thiols. 2. Spectroscopic Evidence for a Thiol-C4(a) Flavin Adduct and the Kinetics of Deprotonation of the -SH Group of the Dithiothreitol Adduct. *J. Am. Chem. Soc.* 102, 7322 - 7327.

Loechler, E.L. and Hollocher, T.C. (1980) Reduction of Flavins by Thiols. 3. The Case for Concerted N,S-Acetal Formation in Attack and an Early Transition State in Breakdown. *J. Am. Chem. Soc.* 102, 7328 - 7334.

Loechler, E.L., Schneider, A.M., Schwartz, D.B. and Hollocher, T.C. (1987) Covalent Electrophilic Catalysis of the Breakdown of Hyponitrite to Nitrous Oxide by Aldehydes, Ketones and Carbon Dioxide. *J. Am. Chem. Soc.* 109, 3076 - 3087.

PUBLICATIONS (Research Papers: Mutagenesis, Carcinogenesis, Anticancer Drugs)

Green, C.L., Loechler E.L., Fowler, K.W. and Essigmann, J.M. (1984) Construction and Characterization of Extrachromosomal Probes for Mutagenesis by Carcinogens: Site-Specific Incorporation of O^6-Methylguanine into Viral and Plasmid Genomes. *Proc. Natl. Acad. Sci.* 81, 13 - 17.

Loechler, E.L., Green, C.L. and Essigmann, J.M. (1984) In Vivo Mutagenesis by O^6-Methylguanine Built Into a Unique Site in a Viral Genome. *Proc. Natl. Acad. Sci.* 81, 6271 - 6275.

Essigmann, J.M., Fowler, K.W., Green, C.L. and Loechler, E.L. (1985) Extrachromosomal Probes for Mutagenesis by Carcinogens: Studies on the Mutagenic Activity of O^6-Methylguanine Built into a Unique Site in a Viral Genome. *Envir. Health Perspectives* 62, 171 - 176.

Loechler, E.L. and King J. (1986) Identification of the 9-Aminoacridine/DNA Complex Responsible for Photodynamic Inactivation of P22. *Biochemistry* 25, 5858 - 5864.

Benasutti, M., Ejadi, S., Whitlow, M.D. and Loechler, E.L. (1988) Mapping the Binding Site of Aflatoxin B_1 in DNA: Systematic Analysis of the Reactivity of Aflatoxin B_1 with Guanines in Different DNA Sequences. *Biochemistry* 27, 472 - 481.

Loechler, E.L., Teeter, M.M. and Whitlow, M.D. (1988) Mapping the Binding Site of Aflatoxin B_1 in DNA: Molecular Modeling of the Binding Sites for the N(7)-Guanine Adduct of Aflatoxin B_1 in Different DNA Sequences. *J. Biomol. Struct. Dyn.* 5, 1237 - 1257.

Benasutti, M. Ezzedine, Z.D. and Loechler, E.L. (1988) Construction of an Escherichia coli Vector Containing the Major DNA Adduct of Activated Benzo[a]pyrene at a Defined Site. *Chem. Res. Toxicol.* 1, 160 - 168.

Loechler, E.L. (1989) Adduct-Induced Base-Shifts: A Mechanism by Which the Adducts of Bulky Carcinogens Might Induce Mutations. *Biopolymers*. 28, 909 - 927.

Basu, A.K., Loechler, E.L., Leadon, S.A. and Essigmann, J.M. (1989) Genetic Effects of cis-Thymine Glycol: Site-Specific Mutagenesis and Molecular Modeling Studies. *Proc. Natl. Acad. Sci.* 86, 7677 - 7681.

Ojwang, J.O., Grueneberg, D.A. and Loechler, E.L. (1989) Synthesis of a Duplex Oligonucleotide Containing a Nitrogen Mustard Interstrand Cross-Link. *Cancer Res.* 49, 6529 - 6537.

Loechler, E.L. (1990) Molecular Modelling of O^2Alkylthymines and O^4Alkylthymines in DNA: Structures that May Be Pertinent to the Incorporation of the Corresponding dAlkTTP into DNA by DNA Polymerases In Vitro. *Mutation Res.* 233, 39 - 43.

Grueneberg, D.A., Ojwang, J.O., Benasutti, M., Hartman, S. and Loechler, E.L. (1991) Construction of a Human Shuttle Vector Containing a Single Nitrogen Mustard Interstrand, DNA-DNA Cross-Link at a Unique Plasmid Location. *Cancer Res.* 51, 2273 - 2279.

Loechler, E.L. (1991) Rotation about the C6-O^6Bond in O^6-Methylguanine: The syn and anti-conformers Can Be of Similar Energies in Duplex DNA as Estimated by Molecular Modeling Techniques. *Carcinogenesis* 12, 1693 - 1699.

Mackay, W. , Benasutti, M., Drouin, E. and Loechler, E.L.(1992) Mutagenesis by the Major Adduct of Activated Benzo[a]pyrene, (+)-anti-BP- N^2-Gua, When Studied in an Escherichia coli Plasmid using Site-Directed Methods. *Carcinogenesis* 13, 1415 - 1425.

Rodriguez, H., Bhatt, U., Snow, E.T. and Loechler, E.L. (1992) An Escherichia coli Plasmid-based, Mutational System in which supF Mutants Are Selectable: Insertion Elements Dominate the Spontaneous Spectra. *Mutation Res.* 270, 219 - 231.

Rodriguez, H. and Loechler, E.L. (1993) Mutational Spectra of the (+)-anti-diol epoxide of Benzo[a]pyrene in a supF Gene of an Escherichia coli Plasmid: DNA Sequence Context Influences Hotspots, Mutational Specificity and the Extent of SOS Enhancement of Mutagenesis. *Carcinogenesis* 14, 373 - 383.

Rodriguez, H. and Loechler, E.L. (1993) Mutagenesis by the (+)-anti-diol epoxide of Benzo[a]pyrene: What Controls Mutagenic Specificity? *Biochemistry* 32, 1759 - 1769.

Dosanjh, M.K., Singer, B. and Loechler, E.L. (1993) Evidence from in vitro Replication that O^6-methylguanine Can Adopt Multiple Conformations. *Proc. Natl. Acad. Sci.* 90, 3983 - 3987.

Drouin, E. and Loechler, E.L. (1993) Mutagenesis by the (+)-anti diol epoxide Benzo[a]pyrene Does Not Significantly Involve AP-sites: Evidence that the Complexity of the Mutational Spectra is Due to Adduct Conformational Polymorphism. *Biochemistry* 32, 6555 - 6562.

Gill, R.D., Min, Z., Cortez, C., Harvey, R.G., Loechler, E.L. and DiGiovanni, J. (1993) Construction of Escherichia coli Vectors Containing Deoxyadenosine and Deoxyguanosine Adducts from (+)-anti-Dibenz[a,j]anthracene-Diol-Epoxide at a Defined Site. *Chemical Res. Toxicol.* 6, 681 - 689.

Gill, R.D., Rodriguez, H., Cortez, C., Harvey, R.G., Loechler, E.L. and DiGiovanni, J. (1993) Mutagenic Specificity of the (+)-anti-diol epoxide of Dibenz[a,j]anthracene in the supF Gene of an Escherichia coli Plasmid. *Mol. Carcinogenesis,* 8, 145 - 154.

Loechler, E.L. (1994) A Violation of the Swain-Scott Principle and Not S_N1 vs. S_N2 Reaction Mechanisms, Explains Why Carcinogenic Alkylating Agents Can Form Different Proportions of Adducts at Oxygen vs. Nitrogen in DNA. *Chemical Res. Toxicol.* 7, 277 - 280.

Rodriguez, H. and Loechler, E.L. (1995) Are Base Substitution and Frameshift Mutagenesis Pathways Interrelated? An Analysis Based Upon Studies of Mutagenesis by the (+)-anti diol Epoxide of Benzo[a]pyrene. *Mutation Res.* 326, 29 - 37.

Drouin, E. and Loechler, E.L. (1995) The Major Adduct of the (+)-anti diol epoxide benzo[a]pyrene can be unstable in double stranded DNA. *Biochemistry* 34, 2251 - 2259.

Loechler, E.L. (1995) How Are Potent Bulky Carcinogens Able to Induce Such a Diverse Array of Mutations? *Mol. Carcinogenesis* 13, 213 - 219

Jelinsky, S. A., Mao, B., Geacintov, N.E. and Loechler, E.L. (1995) The major, N^2-Gua adduct of the (+)-anti-benzo[a]pyrene diol epoxide is capable of inducing G->A and G->C, in addition to G->T,mutations.*Biochemistry* 34, 13545 - 13553.

Min, Z., Gill, R.G., Cortez, C., Harvey, R.G., Loechler, E.L. and DiGiovanni, J. (1996) Targeted A->T, and G->T mutations induced by site-specific deoxyadenosine and deoxyguanosine adducts, respectively, from the (+)-anti-diol-epoxide of dibenz[a,j]anthracene in M13mp7L2. *Biochemistry*. 35, 4128 - 4138.

Berardini, M., Mackay, W. and Loechler, E.L. (1997) A Site-Specific Study of a Plasmid Containing Single Nitrogen Mustard Interstrand Cross-Link: Evidence for a Second, Recombination-Independent Pathway for the DNA Repair of Interstrand Cross-Links. *Biochemistry*. 36, 3506 - 3513.

Hanrahan, C.J., Bacolod, M.D., Vyas, R.R., , Liu, T., Geacintov, N.E., Loechler, E.L. and Basu, A.K. (1997) Sequence specific mutagenesis of the major (+)-anti-benzo[a]pyrene diol epoxide-DNA adduct at a mutational hotspot in vitro and in Escherichia coli cells. *Chemical Research in Toxicology* 10, 369 - 377.

Kozack, R. and Loechler, E.L. (1997) Molecular modeling of the conformational complexity of (+)-anti-B[a]PDE-adducted DNA using simulated annealing. *Carcinogenesis*. 18, 1585 - 1593.

Shukla, R., Liu, Y., Geacintov, N. and Loechler, E.L. (1997) The major, N^2-dG adduct of (+)-anti-B[a]PDE shows a dramatically different mutagenic specificity (predominantly, G->A) in a 5'-CGT-3' sequence context. *Biochemistry* 36, 10256 - 10261.

Shukla, R., Jelinsky, S., Liu, Y., Geacintov, N. and Loechler, E.L. (1997) How stereochemistry affects mutagenesis by N2-deoxyguanosine adducts of 7,8-dihydroxy-9,10-epoxy-7,8,9,10-tetrahydrobenzo[a]pyrene: configuration of the adduct bond is more important than those of the hydroxyl groups. *Biochemistry* 36, 13263 - 13269.

Kozack, R. and Loechler, E.L. (1999) Molecular modeling of the major adduct of (+)-anti-B[a]PDE (N^2-dG) in the eight conformations and the five DNA sequences most relevant to base substitution mutagenesis. *Carcinogenesis* 20, 85 - 94.

Kozack, R., Shukla, R. and Loechler, E.L. (1999) A Hypothesis for What Conformation of the Major Adduct of (+)-anti-B[a]PDE (N^2-dG) Causes G->T vs. G->A Mutations Based Upon a Correlation between Mutagenesis and Molecular Modeling Results. *Carcinogenesis* 20, 95 - 104.

Shukla, R., Geacintov, N. and Loechler, E.L. (1999) The major, N^2-dG adduct of (+)-anti-B[a]PDE induces G->A mutations in a 5'-AGA-3' sequence context. *Carcinogenesis* 20, 261 - 268.

Berardini, M., Foster, P. and Loechler, E.L. (1999) DNA polymerase II (polB) is involved in a new DNA repair pathway for DNA Interstrand Cross-Links in Escherichia coli. *J. Bact.* 181, 2878 - 2882

Struck, R.F., Davis, R.L., Jr., Berardini, M.D. and Loechler, E.L. (2000) DNA guanine-guanine cross-linking sequence specificity of isophosphoramide mustard, the alkylating metabolite of the clinical antitumor agent ifosamide. *Cancer Chemother. Pharmacol.* 45, 59-62.

Seo, K.-Y., Jelinsky, S.A. and Loechler, E.L. (2000) Adduct conformational complexity causes adduct mutational complexity: Evidence from mutagenic studies of the potent environmental carcinogen benzo[a]pyrene. *Mutation Res.* 463, 215-245.

Lee, C.H., Chandani, S. and Loechler, E.L. (2002) Molecular modeling of four stereoisomers of the major B[a]PDE adduct (at N^2-dG) in five cases where the structure is known from NMR studies: Molecular modeling is consistent with NMR results. *Chemical Research in Toxicology*. 15, 1429-1444.

Lee, C.H. and Loechler, E.L. (2003) Molecular modeling of the major benzo[a]pyrene N^2-dG adduct in cases where mutagenesis results are known in double stranded DNA. *Mutation Res.* 529, 59 – 76.

Yin, J., Seo, K.-Y. and Loechler, E.L. (2004) A role for DNA polymerase V in G->T mutagenesis from the major benzo[a]pyrene N^2-dG adduct when studied in a 5′-TGT sequence in *Escherichia coli. DNA Repair* 3, 323-334.

Seo, K.-Y., Nagalingam, A, and Loechler, E.L. (2005) Mutagenesis studies of the major benzo[a]pyrene N^2-dG adduct in a 5′-TG vs. 5′-UG sequence: loss of the methyl group causes only a modest decrease in the [G->T/G->A] ratio. *Mutagenesis* 20, 105-110.

Chandani, S., Lee, C.H. and Loechler, E.L. (2005) Free energy perturbation methods to study structure and energetics of DNA adducts: Results for the major N^2-dG adduct of benzo[a]pyrene in two conformations and different sequence contexts. *Chemical Research in Toxicology*. 18, 1108-1123.

Seo, K.-Y., Nagalingam, A. Tiffany, M. and Loechler, E.L. (2005) Mutagenesis studies on four stereoisomeric N^2-dG benzo[a]pyrene adducts in the identical 5'-CGC sequence used in NMR studies: Although adduct conformation differs, mutagenesis outcome does not as G->T mutations dominate in each case. *Mutagenesis* 20, 441 - 448.

Seo, K.-Y., Nagalingam, A, Shadi Miri, Jun Yin, Alexander Kolbanovskiy, Anant Shastry, and Loechler, E.L. (2006) Mirror Image Stereoisomers of the Major Benzo[a]pyrene N^2-dG Adduct Are Bypassed by Different Lesion-Bypass DNA Polymerases in *E. coli DNA Repair* 5, 515 - 527.

Lee, C.H., Chandani, S. and Loechler, E.L. (2006) Homology modeling of four lesion-bypass DNA polymerases: structure and lesion bypass findings suggest that *E. coli* pol IV and human Pol η are orthologs, and *E. coli* pol V and human Pol κ are orthologs. *Journal of Molecular Graphics and Modelling* 25, 87 - 102.

Kalam, M.A., Haraguchi, K., Alimchandani, S., Loechler, E.L., Moriya, M., Greenberg, M.M. and Basu, A.K. (2006) Comparative mutagenesis of Fapy.G and 8-oxo-G in mammalian cells. *Nucleic Acids Research* 34, 2305 - 2315.

Chandani, S., Lee, C.H. and Loechler, E.L. (2007) Molecular Modeling Benzo[a]pyrene N2-dG Adducts in Two Partially Overlapping Active Sites of the Y-Family DNA Polymerase Dpo4. *Journal of Molecular Graphics and Modelling*. 25, 658 - 670.

Chandani, S. and Loechler, E.L. (2009) Y-Family DNA Polymerases May Use Two Different dNTP Shapes for Insertion: A Hypothesis and Its Implications *Journal of Molecular Graphics and Modelling*. 27, 759 - 769.

Seo, K.-Y., Yin, J., Donthamsetti, P., Chandani, S., Lee, C.H. and Loechler, E.L. (2009) Amino Acid Architecture that Influences dNTP Insertion Efficiency in Y-Family DNA Polymerase V of *E. coli*. *Journal of Molecular Biology*. 392, 270 - 282.

Chandani, S. and Loechler, E.L. (2013) "Structural Model of the Y-Family DNA Polymerase V/RecA Mutasome" *Journal of Molecular Graphics and Modelling*. 39, 133 - 144.

Ikeda, M., Furukohri, A., Philippin, G., Loechler. E.L., Akiyama, M., Katayama, T., Fuchs, R.F., Maki, H., (2014) DNA polymerase IV mediates efficient and quick recovery of replication forks stalled at N^2-dG adducts. *Nucl. Acids Res*. doi: 10.1093/nar/gku547

Sholder, G. and Loechler, E.L. (In Press) "A Method to Accurately Quantitate Intensities of ^{32}P-DNA Bands When Multiple Bands Appear in a Single Lane of a Gel Is Used to Study dNTP Insertion Opposite a Benzo[a]pyrene-dG Adduct by *Sulfolobus* DNA Polymerases Dpo4 and Dbh. *DNA Repair.*
(58)

PUBLICATIONS (Reviews and Book Chapters)

Loechler, E.L., Strauss, H., Bryant, Jr. J.L., King, J. (1983) The Use of Salmonella Bacteriophage P22 to Study the Multiple Mechanisms of Acridine-Induced Damage. IN: *In Vitro Toxicity Testing of Environmental Agents*, Part A (Eds., Kolber, Wong, Grant and DeWoskin; Plenum Press, NY) pp. 79-109.

Loechler, E.L., Green, C.L., Essigmann, J.M. (1986) O^6-Methylguanine Mutagenesis in Double and Single Stranded Bacteriophage DNA In Vivo. IN: *Repair of DNA Lesions Introduced By N-Nitroso Compounds* (Eds., Krokan and Myrnes; Oxford University Press) pp. 14-31.

Essigmann, J.M., Loechler, E.L. (1986) O^6-Methylguanine Mutagenesis and Repair in *E. coli.* IN: Proceedings of the Fourteenth International Cancer Congress, Budapest, Hungary, 1986 (Ed., Sugar).

Essigmann, J.M., Loechler, E.L., Green, C.L. (1986) Genetic Toxicology of O^6-Methylguanine. *Progress in Clinical and Biological Research* 209A, 433-440.

Couto, L.B., Loechler, E.L., Green, C.L., Essigmann, J.M. (1986) Investigations on the DNA Lesions Responsible for Alkylating Agent- Induced Mutagenesis. IN: *Biochemical and Molecular Epidemeology of Cancer.* (Ed., Harris; UCLA Symposium of Cellular and Molecular Biology) Vol. 40, 427-440.

Essigmann, J.M., Loechler, E.L., Green, C.L. (1986) Mutagenesis and Repair of O^6-Substituted Guanines. IN: The Role of Cyclic Nucleic Acid Adducts in Carcinogenesis and Mutagenesis. *International Agency for Research on Cancer Scientific Publication* No. 70. (Ed. Singer and Bartsch; IARC; Lyon, France) pp. 393-399.

Lasko, D.D., Fowler, K.W., Green, C.L., Loechler, E.L. Weiss, C.C., De Rosa, L.M., Kadlubar, F.F., Essigmann, J.M. (1987) Chemical Synthesis and Biological Applications of Oligonucleotides Containing Carcinogen- DNA Adduct: O^6-Methylguanine and N-(Guan-8-yl)-4-Aminobiphenyl. IN: *Chemical Synthesis in Molecular Biology--Biological Macromolecules with Natural and Modified Monomer Units.* (Eds., Blocker, Frank and Fritz; GBF Monographs; Verlag Chemie Press; Weinheim) Vol. 8, pp. 83-93.

Essigmann, J.M., Basu, A.K. and Loechler, E.L. (1989) Mutagenic Specificity of Alkylated and Oxidized Bases as Determined by Site- Specific Mutagenesis. IN: Annali dell' Istituto Superiore di Sanita Vol. 25 (1), pp. 155-162.

Loechler, E.L., Benasutti, M., Basu, A.K., Green, C.L. and Essigmann, J.M. (1990) The Role of Carcinogen DNA Adduct Structure in the Induction of Mutations. IN: *Progress in Clinical and Biological Research, Vol. 340A, Mutation and the Environment, Part A: Basic Mechanisms*, Wiley-Liss, New York, 1990 (Mendelsohn and Albertini), pp. 51-60.

Loechler, E.L. (1991) Molecular Modeling in Mutagenesis and Carcinogenesis. IN: *Methods in Enzymology, Molecular Design and Modeling: Concepts and Applications,* Vol. 203, 458-476.

Loechler, E.L. (1994) Mechanism by Which Aflatoxins and Other Bulky Carcinogens Induce Mutations. IN: *The Toxicology of Aflatoxins: Human Health, Veterinary, and Agricultural Significance* (Eaton and Groopman), Academic Press, Orlando. Chapter 8, pp. 149-178.

Loechler, E.L. (1996) Commentary: The role of adduct-site-specific mutagenesis in understanding how carcinogen DNA adducts cause mutations: Perspective, Prospects and Problems. *Carcinogenesis* 17, 895-902.

Loechler, E.L. (1997) Mutagens and Carcinogens. IN: *Macmillan Encyclopedia of Chemistry*, (Lagowski) Macmillan Reference USA, Simon and Schuster Macmillan, New York, Vol. 3, pp. 992-996.

Kozack, R, Seo, K.-W., Jelinsky, S.A. and Loechler, E.L. (2000) Toward an understanding of the role of DNA adduct conformation in defining mutagenic mechanism based on studies of the major adduct (formed at N^2-dG) of the potent environmental carcinogen, benzo[a]pyrene. *Mutation Res.* 450, 41 - 59.

Loechler, E.L., Henry, B. and Seo, K.-Y. (2001) Biological Responses to Chemical Carcinogens. IN: *The Molecular Basis of Human Cancer* (Coleman and Tsongalis), Humana Press, Totowa, NJ, pp. 203 - 222.

Kriebel, D., Tickner, J., Epstein, P., Lemons, J., Levins, R., Loechler, E.L., Quinn, M., Rudel, R., Schettler, T. and Stoto, M. (2001) The precautionary principle in environmental science. *Env. Health Persp.* 109, 871 - 876.

Loechler, E.L. (2002) Environmental Mutagens and Carcinogens. IN: *Nature Encyclopedia of Life Sciences*, Nature Publishing Group, New York, NY, http://www.els.net.

Clapp, R.W., Jacobs, M.W. and Loechler, E.L. (2008) Environmental and Occupational Causes of Cancer: New Evidence 2005 - 2007. *Rev. Env. Health* 23, 1-37.

Chandani, S. and Loechler, E.L. (2010) Translesion Synthesis and Mutagenic Pathways in *E. coli* Cells. IN: *The Chemical Biology of DNA Damage*, Wiley-VCH, Weinheim, Germany, pp. 353-380.

Chandani, S., Jacobs, C. and Loechler, E.L. (2010) Architecture of Y-Family DNA Polymerases Relevant to Translesion DNA Synthesis as Revealed in Structural and Molecular Modeling Studies *Journal of Nucleic Acids*. pii: 784081. (20)

GRANTS WHILE AT BOSTON UNIVERSITY

Currently Active Grants

Mutagenic Consequences of Benzo[a]pyrene Adducts: National Institutes of Health; 12/1/12 - 11/30/2013; No Cost Extension (ES03775-24).

Past Grants

Mutagenic Consequences of Benzo[a]pyrene Adducts: National Institutes of Health; 9/1/06-11/31/2011; $2,209K.

Mutagenic Consequences of Benzo[a]pyrene Adducts: National Institutes of Health; 9/1/01-8/31/2005; $950K.

Mutagenic Consequences of Benzo[a]pyrene Adducts: National Institutes of Health; 9/1/96-8/31/2000; $610K.

Mutagenic Consequences of Benzo[a]pyrene Adducts: National Institutes of Health; 9/1/93-8/31/96; $430K.

Mutagenic Consequences of Benzo[a]pyrene Adducts: American Cancer Society; 7/1/91-8/31/93; $205K.

Mutagenic Consequences of Benzo[a]pyrene Adducts: National Institute of Environmental Health Sciences; 7/1/85-6/30/91; $810K

Molecular Modeling in Chemical Carcinogenesis; National Institutes of Health; 12/1/99-11/30/03; $490K.

Molecular Modeling in Chemical Carcinogenesis; National Institutes of Health; 12/1/93-11/30/96; $210K.

Molecular Modeling in Chemical Carcinogenesis; National Institutes of Health; 12/1/89-11/30/92; $180K.

Mutagenic pathways involving 5-methylcytosine: National Institutes of Health; 8/1/95 - 7/30/98; Loechler (Co-PI)/ W. Thilley (PI); $350K.

Cyclophosphamide and Isosfamide: Preferred guanyl-guanyl DNA crosslinking; National Instututes of Health; 3/1/94-2/28/98; Loechler (Co-PI)/R. Struck (PI); $250K

Interstrand Crosslinks: Killing, Repair, Mutagenesis; National Instututes of Health; 7/1/93-6/30/97; $450K.

Mechanism of DNA-Template Inactivation by Chemotherapeutic Agents; American Cancer Society; 7/1/86-6/30/89; $180K.

Mechanism of DNA-Template Inactivation by Chemotherapeutic Agents; Massachusetts Branch American Cancer Society; $25K.

Laser Raman Spectroscopy Facility (DRR-BRS Shared Instrumentation Grant; P.I., Rothschild, Physics); 12/1/87-11/30/88; $445K.

INVITED LECTURES (Summary)

Meetings/Symposia:

Repair of DNA Lesions Introduced by N-Nitroso Compounds (Tromso, Norway; 1985), Gordon Research Conference on Mammalian DNA Repair (1989), American Association for Cancer Research Annual Meeting (1989), Fifth International Conference on Environmental Mutagens (1989), Gordon Research Conference on Mutagenesis (1990), Gordon Research Conference on Cancer Chemotherapeutic Agents (1990), Sixth Conversation in Biomolecular Stereodynamics (1991), Gordon Research Conference on Cancer Chemotherapeutic Agents (1991), Sixth International Conference on Environmental Mutagens (1993), Gordon Research Conference on Mutagenesis (1994), 15th International Symposium on Polcyclic Aromatic Compounds (Milan, Italy; 1995), Gordon Research Conference on Mutagenesis (1996), American Chemical Society Annual Meeting (Boston, 1998), Gordon Research Conference on Mutagenesis and Carcinogenesis (Vice-Chair, Ventura, 2000), American Chemical Society Annual Meeting (San Francisco, 2000), Gordon Research Conference on Mutagenesis and Carcinogenesis (Chair, Ventura, 2002), Gordon Research Conference on Mutagenesis and Carcinogenesis (Speaker, Ventura, 2004), Gordon Research Conference on DNA Damage, Mutations and Cancer (Speaker, Ventura, 2006). Gordon Research Conference on DNA Damage, Mutations and Cancer (Speaker, Ventura, 2008)

Invited Seminars:

Roswell Park Memorial Institute (1985), Boston Area Mutagenesis Group (1986), University of Massachusetts Medical School (1987), New York University (1987), Harvard Medical School (1988); National Cancer Institute (Frederick Cancer Research Facility, 1988), National Cancer Institute (Frederick Cancer Research Facility, 1989),Vanderbilt University (Center in Molecular Toxicology, 1990), Johns Hopkins Oncology Center (1990), University of Connecticut (Chemistry, 1991), National Cancer Institutes (1991), University of Massachusetts, Boston (Biology, 1992), University of Texas M.D. Anderson Cancer Center, (1992), Southern Research Institute (1992), American Health Foundation (1993), New York University (Chemistry, 1994), National Cancer Institute (Frederick Cancer Research Facility, 1994), New York University (Biology, 1994), Brandeis University (Biology, 1994), Brandeis University (Biochemistry, 1995), Vanderbilt University (Center in Molecular Toxicology, 1997); City of Hope Hospital (Molecular Carcinogenesis, 1997); Boston Area Mutagenesis Group (1998); Massachusetts Institute of Technology (Toxicology Program, 1999); University of Massachusetts Medical Center (Pharmacology and Molecular Toxicology, 1999); Boston University Medical Center (Cancer Biology, 1999); St. Louis University Medical School (Biochemistry, 2000).

SERVICE ON EDITORIAL BOARDS AND COMMITTEES (Summary)

Editorial Boards:

Mutation Research (1998 - 2005)
Chemical Research in Toxicology (2000 - 2003)
Carcinogenesis (1994 - 1996)

Permanent Membership on Grant Review Committees:

Member, Radiation Therapeutics and Biology Study Section, N.I.H. (2009)
Member, Oncology Fellowship Area Study Section, N.I.H. (2006 - 2007)
Member, Chemical Pathology Study Section, N.I.H. (1995 - 2001)
Member, Carcinogenesis and Nutrition Study Section, American Cancer Society (1989 - 1994).

Consultant on Environmental Risks:

Member, Scientific Review Committee to advise the California Department of Pesticide Regulations on whether methyl iodide should be approved as a pesticide in California.

Ad Hoc Membership on Grant Review Committees:

Radiation Therapeutics and Biology, N.I.H. (2008), Postdoctoral Fellowship Review Panel, N.I.H. (2006), Cancer Etiology Study Section, N.I.H. (2002, 2003, 2004), Special Study Section for the Chemical Pathology Study Section, N.I.H. (1999), Review Committee for the United States Army Medical Research and Development Command Breast Cancer Research Program (1994), Program Project Site Visit Committee for the Chemical Pathology Study Section, N.I.H. (1992), Special Study Section for the Experimental Therapeutics 2 Study Section, N.I.H. (1991), Site Visit Committee for the Chemical Pathology Study Section, N.I.H. (1989), Program Project Site Visit Committee for the Genetics Study Section, N.I.H. (1988), Program Project Site Visit Committee for the Chemical Pathology Study Section, N.I.H. (1988), Program Project Site Visit Committee for the Chemical Pathology Study Section, N.I.H. (1987), Site Visit Committee for the Chemical Pathology Study Section, N.I.H. (1986).