

FEB 19 1992

SC 1-4

National Council on Radiation Protection and Measurements
7910 Woodmont Avenue, Suite 800
Bethesda, Maryland 20814

BIOGRAPHICAL INFORMATION

Name R. Julian PrestonAddress Chemical Industry Institute of Toxicology (CIIT)

6 Davis Drive, P.O. Box 12137, Research Triangle Park, NC 27709
Street City State Zip

Birth Date [REDACTED] EXL

Education	Institution	Field of Study	Degree	Year Conferred
	Peterhouse, Cambridge University	Genetics	BA	[REDACTED] EXL
	Peterhouse, Cambridge University		MA	
	Reading University, England	Radiation Genetics	Ph.D.	

Professional Experience (Two most recent past positions)

Position Title	Organization	Dates
Group Leader	Biology Division, Oak Ridge National Lab.	1976-1980
Section Head	Biology Division, Oak Ridge National Lab.	1980-1991

Society Affiliations Environmental Mutagen Society, Radiation Research Society, American Association for Cancer Research, American Society of Human Genetics

Honors President, Environmental Mutagen Society, Member NIH Toxicology Study Section, Editor, Mutation Research, Alexander Hollaender Award of Environmental Mutagen Society

Publications (Attach list of representative publications)

Areas of interest related to NCRP activities (Select no more than three from enclosed list).

Genetics
Radiobiology
Toxicology

Date 2/14/92Signature [Signature]

R. Julian Preston, Ph.D.

PUBLICATIONS

G.J. Neary and R.J. Preston, Chromosome aberrations and the theory of RBEIII. Evidence from experiments with soft X-rays and a consideration of the effects of hard X-rays, *Int. J. Radiat. Biol.* 12: 317-345, 1967.

R.J. Munson, G.J. Neary, B.A. Bridges and R.J. Preston, The sensitivities of *Escherichia coli* to ionizing particles of different LETS, *Int. J. Radiat. Biol.* 13: 205-204, 1967.

J.R.K. Savage, R.J. Preston and G.J. Neary, Chromatid aberrations in *Tradescantia bracteata* and a further test of Revell's hypothesis, *Mutat. Res.* 5: 47-56, 1968.

G.J. Neary, R.J. Preston, J.R.K. Savage and E.G. Hunnabell, Biological effects of soft and ultra-soft x-rays, *Studia Biophysica* 12: 198, 1968. VI Congress of European Society for Radiation Biology, Interlake, Switzerland.

G.J. Neary and R.J. Preston, Chromosome aberrations and cell killing for Chinese hamster cells at different radiation qualities, *Studia Biophysica* 18: 173, 1969, VII Congress of European Society for Radiation Research, ULM, Germany.

R. J. Preston, Current research in neutron-irradiation effects on plant chromosomes, Neutrons in Radiobiology, Conf. 691106, pp. 349-372, 1969, Oak Ridge, Tennessee.

R.J. Preston, Cell survival following irradiation, Ph.D. Thesis, University of Reading, England, 1970.

J.G. Brewen, R.J. Preston and W.M. Generoso, The induction of translocations in mouse spermatogonia by radiation, *Radiat. Res.* 51: 514, 1972.

J. G. Brewen, R.J. Preston and L.G. Littlefield, Radiation induced human chromosome aberration yields following an accidental whole-body exposure to ⁶⁰Co gamma rays, *Radiat. Res.* 49: 647-656, 1972.

R.J. Preston, J.G. Brewen and K.P. Jones, Radiation-induced chromosome aberrations in Chinese hamster leukocytes. A comparison of *in vivo* and *in vitro* exposures, *Int. J. Radiat. Biol.* 21: 397-400, 1972.

J.G. Brewen and R.J. Preston, chromosome aberrations as a measure of mutagenesis Comparisons *in vitro* and in somatic and germ cells, *Environmental Health Perspectives*, pp. 157-166, 1973.

J.G. Brewen, R.J. Preston, K.P. Jones and D.G. Gosslee, Genetic hazards of ionizing radiations: Cytogenetic extrapolations from mouse to man, *Mutat. Res.* 17: 245-254, 1973.

R.J. Preston and J.G. Brewen, X-ray-induced translocations in spermatogonia.I. Dose and fractionation responses in mice, *Mutat. Res.* 19: 215-223, 1973.

J.G. Brewen and R.J. Preston, Chromosomal interchanges induced by radiation in spermatogonial cells and leukocytes of mouse and Chinese hamster, *Nature New Biology* 244: 111-113, 1973.

J.G. Brewen and R.J. Preston, Cytogenetic effects of environmental mutagens in mammalian cells and the extrapolation to man, *Mutat. Res.* 26: 297-305, 1974.

R.J. Preston, J.G. Brewen and N. Gengozian, Persistence of radiation-induced chromosome aberrations in marmoset and man, *Radiat. Res.* 60: 516-524, 1974.

G.J. Neary, D.A. Bance, R. Cox, R.J. Preston, V. Richards, M.A. Stephens, A. Stretch and R.E. Wilkinson, A synergistic interaction between U.V. and protons in causing loss of reproductive capacity in *Escherichia coli* B/r, *Int. J. Radiat. Biol.* 26: 187-192, 1974.

J.G. Brewen and R.J. Preston, The use of chromosome aberrations for predicting genetic hazards to man, International Congress of Radiation Research, Academic Press, Inc., pp. 926-936, 1975.

J.G. Brewen, R.J. Preston and N. Gengozian, Analysis of X-ray-induced chromosomal translocations in human and marmoset spermatogonial stem cells, *Nature* 253: 468-470, 1975.

W.M. Generoso, R.J. Preston and J.G. Brewen, 6-mercaptopurine, an inducer of cytogenetic and dominant-lethal effects in premeiotic and early meiotic germ cells of male mice, *Mutat. Res.* 28: 437-447, 1975.

J.G. Brewen, H.S. Payne, K.P. Jones and R.J. Preston, Studies on chemically induced dominant lethality. I. The cytogenetic basis of MMS-induced dominant lethality in post-meiotic male germ cells, *Mutat. Res.* 33: 239-250, 1975.

J.G. Brewen, H.S. Payne and R.J. Preston, X-ray-induced chromosome aberrations in mouse dictyate oocytes. I. Time and dose relationships, *Mutat. Res.* 35: 111-120, 1976.

R.J. Preston and J.G. Brewen, X-ray-induced translocations in spermatogonia. II. Fractionation responses in mice, *Mutat. Res.* 36: 333-344, 1976.

R.J. Preston, Approaches to human risk estimate from cytogenetic observations, *Radiat. Res.* 67: 1976.

E.A. Hiss and R.J. Preston, The effect of cytosin arabinoside on the frequency of single-strand breaks in DNA of mammalian cells following irradiation or chemical treatment, *Biochim. Biophys. Acta* 478: 1-8, 1977.

J.G. Brewen and R.J. Preston, Radiation-induced chromosome aberrations in somatic and germ cells of the male marmoset, *Prim. Med.* 10: 199-204, 1978.

R.J. Preston and J.G. Brewen, X-ray-induced chromosome aberrations in the leukocytes of mouse and man. In "Mutagen-Induced Chromosome Damage in Man," H.J. Evans and D.L. Lloyd, Eds., Edinburgh University Press, pp. 33-40, 1978.

J.G. Brewen and R.J. Preston, Analysis of chromosome aberrations in mammalian germ cells. In "Chemical Mutagens," Vol. 5, A. Hollaender and F.J. de Serres, Eds., Plenum Publishing Corp., pp. 127-150, 1978.

J.G. Brewen, R.J. Preston and H.E. Luippold, Radiation-induced translocations in spermatogonia. III. Effect of long-term chronic exposures to gamma-rays, *Mutat. Res.* 61: 405-409, 1979.

N. Gengozian, J.G. Brewen, R.J. Preston and J.S. Batson, Presumptive evidence for the absence of functional germ cell chimerism in the marmoset, *J. Med. Primatol.* 9: 9-27, 1980.

R.J. Preston, The effect of cytosin arabinoside on the frequency of X-ray-induced chromosome aberrations in normal human leukocytes, *Mutat. Res.* 69: 71-79, 1980.

R.J. Preston, DNA repair and chromosome aberrations: The effect of cytosine arabinoside on the frequency of chromosome aberrations induced by radiation and chemicals, *Teratogenesis, Carcinogenesis and Mutagenesis* 1: 147-159, 1980.

R.J. Preston, X-ray-induced chromosome aberrations in Down lymphocytes: An explanation of their increased sensitivity, *Environ. Mutagen.* 3: 85-89, 1981.

R.J. Preston and P.C. Gooch, The induction of chromosome-type aberrations in G₁ by methyl methanesulfonate and 4-nitroquinoline-N-oxide, and the non-requirement of an S-phase for their production, *Mutat. Res.* 83: 395-402, 1981.

R.J. Preston, W. Au, M.A. Bender, J.G. Brewen, A.V. Carrano, J.A. Heddle, A.F. McFee, S. Wolff and J.S. Wassom, Mammalian *in vivo* and *in vitro* cytogenetic assays: A report of the U.S. EPA's Gene-Tox Program, *Mutat. Res.* 87: 143-188, 1981.

B.C. Pal, R.B. Cumming, M.F. Walton and R.J. Preston, Environmental pollutant 5-chlorouracil is incorporated in mouse liver and testes DNA, *Mutat. Res.* 91: 395-401, 1981.

Peter Brookes and R.J. Preston, Summary report on the performance of *in vitro* mammalian assays. In "Evaluation of Short-Term Tests for Carcinogens," F.J. de Serres and J. Ashby, Eds. Elsevier/North Holland, pp. 78-85, 1981.

R.J. Preston, Report of Panel I in "Guidelines for Studies of Human Populations Exposed to Mutagenic and Reproductive Hazards," March of Dimes, 1981.

R.J. Preston, I.D. Adler, A. Leonard and M.F. Lyon, Mutagenicity of selected chemicals in *in vivo* cytogenetic assays. In "Comparative Chemical Mutagenesis," F.J. de Serres and M.D. Shelby, Eds., Plenum Publishing Corp., New York, pp. 549-631, 1981.

R.J. Preston and J.G. Brewen, The use of the host-mediated assay for cytogenetic studies. "In Cytogenetic Assays of Environmental Mutagens," Chapter 11, T.C. Hsu, Ed., Allanheld Publishing Co., pp. 231-235, 1982.

J.G. Brewen and R.J. Preston, Cytogenetic analysis of mammalian oocytes in mutagenicity studies. In "Cytogenetic Assays of Environmental Mutagens," Chapter 14, T.C. Hsu, Ed., Allanheld Publishing Co., pp. 277-287, 1982.

R. J. Preston, DNA repair and chromosome aberrations: Interactive effects of radiation and chemicals. In "Progress in Mutation Research," Vol. 4, Elsevier Biomedical Press, pp. 25-35, 1982.

M.A. Bender and R.J. Preston, The role of base damage in the induction of chromosome aberrations by X-rays. In "Progress in Mutation Research," Vol. 4, Elsevier Biomedical Press, pp. 37-46, 1982.

R.J. Preston, The induction of chromosome aberrations in germ cells: A discussion of factors that can influence sensitivity to chemical mutagens. In "Proceedings of 3rd International Conference on Environmental Mutagens," Tokyo University Press, Alan E. Liss, Inc., pp. 463-474, 1982.

R.J. Preston, The use of inhibitors of DNA repair in the study of the mechanisms of induction of chromosome aberrations, *Cytogenet. Cell Genet.* 33: 20-26, 1982.

M.W. Heartlein, J.P. O'Neill, B.C. Pal and R.J. Preston, The induction of specific locus mutations and sister chromatid exchanges by 5-bromo- and 5-chloro-deoxyuridine *Mutat. Res.* 92: 411-416, 1982.

R.J. Preston, Cytogenetic studies in animals. In "Proceedings of Symposium on Genetic Toxicology: An Agricultural Perspective," ed. by R.A. Fleck and A. Hollaender, Plenum Publishing Corp., pp. 379-388, 1982.

R.J. Preston, Chromosome aberrations in decondensed sperm DNA, Banbury Report 13: Indicators of Genotoxic Exposure, Cold Spring Harbor Laboratory, 1982.

R.J. Preston, The use of human lymphocyte assay for the cytogenetic analysis of human populations. In "Proceedings of the Ethylene Oxide Worker Safety Seminar," J.F. Jorkasky, Ed., HIMA, Washington, pp. 57-84, 1982.

M.W. Heartlein, J.P. O'Neill and R.J. Preston, SCE induction is proportional to substitution in DNA for thymidine by CldU and BrdU, *Mutat. Res.* 107: 103-109, 1983.

J.P. O'Neill, M.W. Heartlein and R.J. Preston, Sister-chromatid exchanges and gene mutations are induced by the replication of 5-bromo- and 5-chloro-deoxyuridine substituted DNA, *Mutat. Res.* 109: 259-270, 1983.

R.J. Preston, Radiation damage to DNA and its repair in the formation of chromosome aberrations. In "Radiation-induced Chromosome Damage in Man," Chapter 6, Alan R. Liss, Inc., New York, New York, pp. 111-125, 1983.

C.W. Heath, M.R. Nadel, M.M. Zack, C.D. Stutzman, A.T.L. Chen, R.D. Kimbrough, D.C. VanderMeer, J. Figler, M.A. Bender, R.P. Kale, M.S. Makar, B.E. Pyatt, R.J. Preston, W.W. Au, P.C. Gooch, T. Ho and H. Luippold, A study of cytogenetic patterns in persons living near the Love Canal, U.S. Department of Health and Human Services Report, 1983.

R.J. Preston, Intrinsic factors that can affect sensitivity to chromosome aberration induction. In "American-Swedish Workshop," W. Sheridan and F.J. de Serres, R.W. Pero and W. Sheridan, Eds., Plenum Publishing Corp., pp. 201-210, 1984.

C.W. Heath, M.R. Nadel, M.M. Zack, A.T.L. Chen, M.A. Bender and R.J. Preston, Cytogenetic finding in persons living near the Love Canal, *JAMA* 25: 1437-1440, 1984.

R.J. Preston, Cytogenetic abnormalities as an indicator of mutagenic exposure. In "Single Cell Mutation Monitoring Systems: Methodologies and Applications," A. Ansari and F.J. de Serres, Eds., Plenum Publishing Co., pp. 127-143, 1984.

W.W. Au, J.P. O'Neill, W. Wang, H.E. Luippold and R.J. Preston, Induction of chromosome aberrations and specific locus mutation but not sister chromatid exchanges in Chinese hamster ovary cells by neocarcinostatin, *Teratogenesis, Carcinogenesis, and Mutagenesis* 4: 515-522, 1984.

M.W. Heartlein and R.J. Preston, The effect of 3-aminobenzamide on the frequency of X-ray- or neutron-induced chromosome aberrations in cycling or non-cycling human lymphocytes, *Mutat. Res.* 148: 91-97, 1985.

R. Julian Preston, Use of cytogenetic endpoints in human lymphocytes as indicators of exposure to genotoxicants. In "New Approaches in Toxicity Testing and their Application in Human Risk Assessment," ed. by A.P. Li, Raven Press, New York, pp. 41-50, 1985.

M.W. Heartlein and R.J. Preston, An explanation of interspecific differences in sensitivity of X-ray-induced chromosome aberrations and a consideration of dose-response curves, *Mutat. Res.* 150: 299-305, 1985.

M.J. Aardema, W.W. Au, R.E. Hand, Jr. and R.J. Preston, Differential sensitivity of a mouse myeloid leukemia cell line and normal mouse bone marrow cells to X-ray-induced chromosome aberrations, *Cancer Res.* 45: 5321-5327, 1985.

R.J. Preston (co-author), WHO "Guidelines for the study of genetic effects in human populations," *Environmental Health Criteria* 46, Geneva, 126 pp., 1985.

J.B. Mailhes, R.J. Preston and K.S. Lavappa, Mammalian *in vivo* assays for aneuploidy in female germ cells, *Mutat. Res.* 167: 139-148, 1986.

J.M. Allen, J.C. Liang, A.V. Carrano and R.J. Preston, Review of the literature on chemical-induced aneuploidy in mammalian male germ cells, *Mutat. Res.* 167: 123-137, 1986.

R.J. Preston (co-author), Biological Dosimetry Chromosomal Aberration Analysis for Dose Assessment, Technical Report Series No. 260, International Atomic Energy Agency, Vienna, 1986.

M.K. Smith, H. Zenick, R.J. Preston, E.L. George and R.E. Long, Dominant lethal effects of subchronic acrylamide administration in the male Long-Evans rat, *Mutat. Res.* 173: 273-277, 1986.

M.J. Aardema and R.J. Preston, DNA-repair kinetics and the sensitivity of cells to X-ray-induced chromosome aberrations: A mouse myeloid leukemia cell line and normal mouse bone marrow cells, *Mutat. Res.* 162: 225-232, 1986.

R.J. Preston, Radequivalence: An approach to risk assessment, *Hazard Assessment of Ethylene Oxide*, 86-89, 1986.

R.J. Preston, B.J. Dean, S. Galloway, H. Holden, A.F. McFee and M. Shelby, Mammalian *in vivo* cytogenetic assays, Analysis of chromosome aberrations in bone marrow cells *Mutat. Res.* 189: 157-165, 1987.

R.J. Preston J.R. San Sebastian and A.F. McFee, The *in vitro* human lymphocyte assay for assessing the clastogenicity of chemical agents, *Mutat. Res.* 189: 175-183, 1987.

R.L. Ullrich and R.J. Preston, Myeloid leukemia in male RFM mice following irradiation with fission spectrum neutrons of gamma rays, *Radiat. Res.* 109: 165-170, 1987.

M.A. Bender, A.A. Awa, A.L. Brooks, H.J. Evans, P.G. Groer, L.G. Littlefield, C. Pereira, R.J. Preston and B.W. Wachholz, Current status of cytogenetic procedures to detect and quantify previous exposures to radiation, *Mutat. Res.* 196: 103-159, 1988.

R.A. Winegar and R.J. Preston, The induction of chromosome aberrations by restriction endonucleases that produce blunt-end or cohesive-end double-strand breaks, *Mutat. Res.* 197: 141-149, 1988.

J.B. Mailhes, R.J. Preston, Z.P. Yuan and H.S. Payne, Analysis of mouse metaphase II oocytes as an assay for chemically-induced aneuploidy, *Mutat. Res.* 198: 145-152, 1988.

M.A. Bender, R.J. Preston, R.C. Leonard, P.C. Gooch and M.D. Shelby, Chromosomal aberration and sister chromatid exchange frequencies in peripheral blood lymphocytes of a large human population sample, *Mutat. Res.* 204: 421-433, 1988.

M.A. Bender, R.J. Preston, R.C. Leonard, B.E. Pyatt and P.C. Gooch, Chromosomal aberration and sister-chromatid exchange frequencies in peripheral blood lymphocytes of a large human population sample. II. Extension to age range, *Mutat. Res.* 212: 149-154, 1989.

R.J. Preston, A short journey from classical to molecular cytogenetics, *Environ. Mol. Mutagen.* 14: 126-132, 1989 (Special Anniversary Invited Review Series).

S. Mitra, M.O. Sikpi, R.J. Preston and L.C. Waters, Nonrandom distribution of mutations induced by X-rays in a plasmid target in human cells. In "Multilevel Health Effects Research: From Molecules to Man," ed. by J.F. Park and R.A. Pelroy, Battelle Press, Richland, Washington, pp. 67-80, 1989.

Liane B. Russell and R. Julian Preston, Genetics research in the Biology Division, *ORNL Review* 22: 12-15, 1989.

R. Julian Preston, Chromosome alterations and cancer, *ORNL Review* 22: 16-19, 1989.

M.O. Sikpi, L.C. Waters, K.H. Kramer, R.J. Preston and S. Mitra, N-methyl-N-nitrosourea-induced mutations in a shuttle plasmid replicated in human cells, *Mol. Carcin.* 3: 30-36, 1990.

R.J. Preston, The potential mutagenicity of styrene and its metabolites, *The SIRC Review* Vol. 1, No. 1, pp. 25-31, 1990.

M.A. Bender, R.J. Preston, R. C. Leonard, B.E. Pyatt and P.C. Gooch, On the distributions of spontaneous chromosomal aberrations in human peripheral blood lymphocytes in culture, *Mutat. Res.* 244: 215-220, 1990.

R.J. Preston, Styrene (vinyl benzene) and its metabolites - A discussion of results from assays for detecting chromosomal aberrations and sister chromatid exchanges, *The SIRC Review* Vol. 1, No. 2, pp. 23-37, 1990.

R.J. Preston, Biological Dosimetry: Mechanistic Concepts, Proceedings of First International Conference on Biological Dosimetry, Madrid, Spain, December, 1990.

R. Julian Preston, Mechanisms of induction of specific chromosomal alterations. In "DNA Damage and Repair in Human Tissues," ed. by B.M. Sutherland and A.D. Woodhead, Plenum Press, 1990.

H.W. Chung, J.W. Phillips, R.A. Winegar, R.J. Preston, and W.F. Morgan, Modulation of restriction enzyme-induced damage by compounds that interfere with cellular responses to DNA damage: A cytogenetic and pulsed field gel analysis, *Radiation Research* 125: 107-113, 1991.

William C. Dunn, Keizo Tano, Gregory J. Horesovsky, R. Julian Preston, and Sankar Mitra, The role of O⁶-alkylguanine in cell killing and mutagenesis in Chinese hamster ovary cells, *Carcinogenesis* 12: 83-89, 1991.

R.J. Preston, Mechanisms of induction of chromosomal alterations and sister chromatid exchanges: Presentation of a generalized hypothesis. In "Genetic Toxicology: A Treatise," ed. by A.P. Li and R.F. Heflich, Chapter 3, pp. 41-66, Telford Press, 1991.

Larry C. Waters, Matthew O. Sikpi, R. Julian Preston, Sankar Mitra and Armin Jaberaboansari, Mutations induced by ionizing radiation in a plasmid replicated in human cells - I. Similar, Nonrandom Distribution of Mutations in Unirradiated and X-irradiated DNA, *Radiation Research* 127: 190-201, 1991.

Armin Jaberaboansari, William C. Dunn, R. Julian Preston, Sankar Mitra, and Larry C. Waters, Mutations induced by ionizing radiation in a plasmid replicated in human cells - II. Sequence analysis of alpha particle-induced point mutations, *Radiation Research* 127: 202-210, 1991.

M.A. Bender, A.A. Awa, A.L. Brooks, H.J. Evans, P.G. Groer, L.G. Littlefield, C. Pereira, R.J. Preston and B. Wachholz, Current status of cytogenetic procedures to detect and quantify previous exposures to radiation: a summary, *Health Phys* 60 (Suppl): 3, 1991.

R.J. Preston, A consideration of the mechanisms of induction of mutations in mammalian cells by low doses and dose rates of ionizing radiation: in press.

M.A. Bender, R.J. Preston, R. C. Leonard, B.E. Pyatt and P.C. Gooch, On the distributions of spontaneous SCE in human peripheral blood lymphocytes, *Mutation Research*, submission, 9, 1991.

G.A. Preston, H.S. Payne and R.J. Preston, Isolation and characterization of an ARA-C resistant CHO cell mutant that is also X-ray sensitive and is noncomplementary with ataxia telangiectasia cells, *Cancer Research*, 52: 319-327, January, 1992.

Memberships in Professional Societies

Radiation Research Society
Environmental Mutagen Society
American Society of Human Genetics
Genetical Society (UK)
American Association for Cancer Research

Honors and Awards

Martin Marietta Technical Achievement Award, 1985
Martin Marietta Technical Achievement Award, 1989

Committee Assignments - Energy Systems

Member, Exploratory Studies Committee, 1974-77
Member, Publication Committee - Awards, 1986-1988
Chairman, Search Committee, Biology Division Director, 1987
Member, Laboratory Director's Committee on Recruiting and Hiring 1989
Organizer of Genetics Journal Club (Biology Division), 1974-1980
Dr. Preston has also served on a large number of committees within the Biology Division
and the University of Tennessee - Oak Ridge Biomedical Graduate School

Abstracts

Publications listed in curriculum vitae do not include abstracts.

Dr. Preston has about 200 abstracts for presentations at national and international meetings.

Name: R. JULIAN PRESTON

Address:

[REDACTED]

Phone:

[REDACTED]

Business Address: Biology Division
Oak Ridge National Laboratory
P. O. Box 2009
Oak Ridge, Tennessee 37831-8077
Phone: (615) 574-1238

Date of Birth:

[REDACTED]

Place of Birth:

[REDACTED]

Citizenship:

U. S.

[REDACTED]

ACADEMIC EDUCATION

[REDACTED]	Peterhouse, Cambridge University (UK)	B.A. (Genetics) (Hons.)
[REDACTED]	Cambridge University	M.A.
[REDACTED]	Reading University (UK)	Ph.D. (Radiation Biology)

PROFESSIONAL EXPERIENCE

1963-1970	Staff Member, Medical Research Council Radiobiology Unit, Harwell, Didcot Oxfordshire, England Harwell, Didcot
1970-1978	Research Staff Member, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
1970	Adjunct Professor, University of Tennessee Biomedical Graduate School, Oak Ridge, Tennessee
1977-1982	Associate Director, University of Tennessee Biomedical Graduate School, Oak Ridge, Tennessee
1978	Senior Research Staff Member, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
1984-	Section Head, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee

Name: R. JULIAN PRESTON

Address:

[REDACTED]

Phone:

[REDACTED]

Business Address: Biology Division
Oak Ridge National Laboratory
P. O. Box 2009
Oak Ridge, Tennessee 37831-8077
Phone: (615) 574-1238

Date of Birth:

[REDACTED]

Place of Birth:

[REDACTED]

Citizenship:

U. S.

[REDACTED]

ACADEMIC EDUCATION

[REDACTED]

Peterhouse, Cambridge University (UK) B.A. (Genetics) (Hons.)

[REDACTED]

Cambridge University

M.A.

[REDACTED]

Reading University (UK)

Ph.D. (Radiation Biology)

PROFESSIONAL EXPERIENCE

- 1963-1970 Staff Member, Medical Research Council
Radiobiology Unit, Harwell, Didcot
Oxfordshire, England Harwell, Didcot
- 1970-1978 Research Staff Member, Biology Division,
Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1970 Adjunct Professor, University of Tennessee Biomedical Graduate
School, Oak Ridge, Tennessee
- 1977-1982 Associate Director, University of Tennessee Biomedical Graduate
School, Oak Ridge, Tennessee
- 1978 Senior Research Staff Member, Biology Division, Oak Ridge National
Laboratory, Oak Ridge, Tennessee
- 1984- Section Head, Biology Division, Oak Ridge National Laboratory,
Oak Ridge, Tennessee

ADDITIONAL EXPERIENCE (Selected)

Editor, Mutation Research Letters, August 1980-1989.

President, Environmental Mutagen Society, 1989.

Editorial Board of "Mutation Research," 1976; Environmental and Experimental Botany," 1979; "Environmental and Molecular Mutagenesis," 1989.

Member, NIH Toxicology Study Section, 1988-1992.

Consultant, Radiation Effects Research Foundation, Genetics and Molecular Biology, 1989-1991.

Group Leader for "In vivo/In vitro Cytogenetics" - one of the Gene-Tox groups for the Environmental Protection Agency.

Invited speaker at national and international conferences.

Lecturer in Graduate School Cell Biology course for 17 years (8-10 lectures/year), and Cytogenetics course (24 lectures/2 years).

University of Tennessee Senator, 1975-1977.

University of Tennessee Research Committee, 1976-1978.

Vice Chancellor's Special Committee for the Life Sciences, 1977.

Coordinator of Laboratory Rotation Program at UT Biomedical Graduate School, 1977-1982.

Chairman of Oral Preliminary Examination Committee, 1977-1980.

Member of fourteen students thesis committees.

Organizer of Genetics Seminar Series in the Biology Division, 1975-1983.

Genetic Effects Expert Witness and preparer of testimony for Clinch River Breeder Reactor Project, 1982.

6 Ph.D. students have graduated from my laboratory. I currently have 4 Ph.D. students. I have also supervised more than 30 laboratory rotation semester students.

Selected with Dr. M. A. Bender (Brookhaven National Laboratory) to conduct a restudy of cytogenetic damage in residents of Love Canal and controls, 1982.

Consultant to Styrene Information Research Council, 1988-
 Consultant to Procter and Gamble, 1986-
 Consultant to Health Industry Manufacturers' Association, 1981-

PUBLICATIONS

G. J. Neary and R. J. Preston, Chromosome aberrations and the theory of RBE III. Evidence from experiments with soft X-rays and a consideration of the effects of hard X-rays, *Int. J. Radiat. Biol.* 12: 317-345, 1967.

R. J. Munson, G. J. Neary, B. A. Bridges and R. J. Preston, The sensitivities of *Escherichia coli* to ionizing particles of different LETS, *Int. J. Radiat. Biol.* 13: 205-224, 1967.

J.R.K. Savage, R. J. Preston and G. J. Neary, Chromatid aberrations in *Tradescantia bracteata* and a further test of Revell's hypothesis, *Mutat. Res.* 5: 47-56, 1968.

G. J. Neary, R. J. Preston, J.R.K. Savage and E. G. Hunnabell, Biological effects of soft and ultra-soft x-rays, *Studia Biophysica* 12: 198, 1968. VI Congress of European Society for Radiation Biology, Interlake, Switzerland.

G. J. Neary and R. J. Preston, Chromosome aberrations and cell killing for Chinese hamster cells at different radiation qualities, Abstract, *Studia Biophysica*, 1969.

G. J. Neary and R. J. Preston, Chromosome aberrations and cell killing for Chinese hamster cells at different radiation qualities, *Studia Biophysica* 18: 173, 1969, VII Congress of European Society for Radiation Research, ULM, Germany.

R. J. Preston, Current research in neutron-irradiation effects on plant chromosomes, Neutrons in Radiobiology, Conf. 691106, pp. 349-372, 1969, Oak Ridge, Tennessee.

R. J. Preston, Cell survival following irradiation, Ph.D. Thesis, University of Reading, England, 1970.

J. G. Brewen, R. J. Preston and W. M. Generoso, The induction of translocations in mouse spermatogonia by radiation, *Radiat. Res.* 51: 514, 1972.

J. G. Brewen, R. J. Preston and L. G. Littlefield, Radiation-induced human chromosome aberration yields following an accidental whole-body exposure to ^{60}Co gamma rays, *Radiat. Res.* 49: 647-656, 1972.

R. J. Preston, J. G. Brewen and K. P. Jones, Radiation-induced chromosome aberrations in Chinese hamster leukocytes. A comparison of *in vivo* and *in vitro* exposures, *Int. J. Radiat. Biol.* 21: 397-400, 1972.

J. G. Brewen and R. J. Preston, Chromosome aberrations as a measure of mutagenesis: Comparisons *in vitro* and *in vivo* and in somatic and germ cells, *Environmental Health Perspectives*, pp. 157-166, 1973.

J. G. Brewen, R. J. Preston, K. P. Jones and D. G. Gosslee, Genetic hazards of ionizing radiations: Cytogenetic extrapolations from mouse to man, *Mutat. Res.* 17: 245-254, 1973.

R. J. Preston and J. G. Brewen, X-ray-induced translocations in spermatogonia. I. Dose and fractionation responses in mice, *Mutat. Res.* 19: 215-223, 1973.

J. G. Brewen and R. J. Preston, Chromosomal interchanges induced by radiation in spermatogonial cells and leukocytes of mouse and Chinese hamster, *Nature New Biology* 244: 111-113, 1973.

J. G. Brewen and R. J. Preston, Cytogenetic effects of environmental mutagens in mammalian cells and the extrapolation to man, *Mutat. Res.* 26: 297-305, 1974.

R. J. Preston, J. G. Brewen and N. Gengozian, Persistence of radiation-induced chromosome aberrations in marmoset and man, *Radiat. Res.* 60: 516-524, 1974.

G. J. Neary, D. A. Bance, R. Cox, R. J. Preston, V. Richards, M. A. Stephens, A. Stretch and R. E. Wilkinson, A synergistic interaction between U. V. and protons in causing loss of reproductive capacity in *Escherichia coli* B/r, *Int. J. Radiat. Biol.* 26: 187-192, 1974.

J. G. Brewen and R. J. Preston, The use of chromosome aberrations for predicting genetic hazards to man, International Congress of Radiation Research, Academic Press, Inc., pp. 926-936, 1975.

J. G. Brewen, R. J. Preston and N. Gengozian, Analysis of X-ray-induced chromosomal translocations in human and marmoset spermatogonial stem cells, *Nature* 253: 468-470, 1975.

W. M. Generoso, R. J. Preston and J. G. Brewen, 6-mercaptopurine, an inducer of cytogenetic and dominant-lethal effects in premeiotic and early meiotic germ cells of male mice, *Mutat. Res.* 28: 437-447, 1975.

J. G. Brewen, H. S. Payne, K. P. Jones and R. J. Preston, Studies on chemically induced dominant lethality. I. The cytogenetic basis of MMS-induced dominant lethality in post-meiotic male germ cells, *Mutat. Res.* 33: 239-250, 1975.

J. G. Brewen, H. S. Payne and R. J. Preston, X-ray-induced chromosome aberrations in mouse dictyate oocytes. I. Time and dose relationships, *Mutat. Res.* 35: 111-120, 1976.

- R. J. Preston and J. G. Brewen, X-ray-induced translocations in spermatogonia. II. Fractionation responses in mice, *Mutat. Res.* 36: 333-344, 1976.
- R. J. Preston, Approaches to human risk estimate from cytogenetic observations, *Radiat. Res.* 67: 1976.
- E. A. Hiss and R. J. Preston, The effect of cytosine arabinoside on the frequency of single-strand breaks in DNA of mammalian cells following irradiation or chemical treatment, *Biochim. Biophys. Acta* 478: 1-8, 1977.
- J. G. Brewen and R. J. Preston, Radiation-induced chromosome aberrations in somatic and germ cells of the male marmoset, *Prim. Med.* 10: 199-204, 1978.
- R. J. Preston and J. G. Brewen, X-ray-induced chromosome aberrations in the leucocytes of mouse and man. In "Mutagen-Induced Chromosome Damage in Man," H. J. Evans and D. L. Lloyd, Eds., Edinburgh University Press, pp. 33-40, 1978.
- J. G. Brewen and R. J. Preston, Analysis of chromosome aberrations in mammalian germ cells. In "Chemical Mutagens," Vol. 5, A. Hollaender and F. J. de Serres, Eds., Plenum Publishing Corp., pp. 127-150, 1978.
- J. G. Brewen, R. J. Preston and H. E. Luippold, Radiation-induced translocations in spermatogonia. III. Effect of long-term chronic exposures to gamma-rays, *Mutat. Res.* 61: 405-409, 1979.
- N. Gengozian, J. G. Brewen, R. J. Preston and J. S. Batson, Presumptive evidence for the absence of functional germ cell chimerism in the marmoset, *J. Med. Primatol.* 9: 9-27, 1980.
- R. J. Preston, The effect of cytosine arabinoside on the frequency of X-ray-induced chromosome aberrations in normal human leukocytes, *Mutat. Res.* 69: 71-79, 1980.
- R. J. Preston, DNA repair and chromosome aberrations: The effect of cytosine arabinoside on the frequency of chromosome aberrations induced by radiation and chemicals, *Teratogenesis, Carcinogenesis and Mutagenesis* 1: 147-159, 1980.
- R. J. Preston, X-ray-induced chromosome aberrations in Down lymphocytes: An explanation of their increased sensitivity, *Environ. Mutagen.* 3: 85-89, 1981.
- R. J. Preston and P. C. Gooch, The induction of chromosome-type aberrations in G₁ by methyl methanesulfonate and 4-nitroquinoline-N-oxide, and the non-requirement of an S-phase for their production, *Mutat. Res.* 83: 395-402, 1981.
- R. J. Preston, W. Au, M. A. Bender, J. G. Brewen, A. V. Carrano, J. A. Heddle, A. F. McFee, S. Wolff and J. S. Wassom, Mammalian *in vivo* and *in vitro* cytogenetic assays: A report of the U. S. EPA's Gene-Tox Program, *Mutat. Res.* 87: 143-188, 1981.

B. C. Pal, R. B. Cumming, M. F. Walton and R. J. Preston, Environmental pollutant 5-chlorouracil is incorporated in mouse liver and testes DNA, *Mutat. Res.* 91: 395-401, 1981.

Peter Brookes and R. J. Preston, Summary report on the performance of *in vitro* mammalian assays. In "Evaluation of Short-Term Tests for Carcinogens," F. J. de Serres and J. Ashby, Eds. Elsevier/North Holland, pp. 78-85, 1981.

R. J. Preston, Report of Panel I in "Guidelines for Studies of Human Populations Exposed to Mutagenic and Reproductive Hazards," March of Dimes, 1981.

R. J. Preston, I. D. Adler, A. Leonard and M. F. Lyon, Mutagenicity of selected chemicals in *in vivo* cytogenetic assays. In "Comparative Chemical Mutagenesis," F. J. de Serres and M. D. Shelby, Eds., Plenum Publishing Corp., New York, pp. 549-631, 1981.

R. J. Preston and J. G. Brewen, The use of the host-mediated assay for cytogenetic studies. In "Cytogenetic Assays of Environmental Mutagens," Chapter 11, T. C. Hsu, Ed., Allanheld Publishing Co., pp. 231-235, 1982.

J. G. Brewen and R. J. Preston, Cytogenetic analysis of mammalian oocytes in mutagenicity studies. In "Cytogenetic Assays of Environmental Mutagens," Chapter 14, T. C. Hsu, Ed., Allanheld Publishing Co., pp. 277-287, 1982.

R. J. Preston, DNA repair and chromosome aberrations: Interactive effects of radiation and chemicals. In "Progress in Mutation Research," Vol. 4, Elsevier Biomedical Press, pp. 25-35, 1982.

M. A. Bender and R. J. Preston, The role of base damage in the induction of chromosome aberrations by X-rays. In "Progress in Mutation Research," Vol. 4, Elsevier Biomedical Press, pp. 37-46, 1982.

R. J. Preston, The induction of chromosome aberrations in germ cells: A discussion of factors that can influence sensitivity to chemical mutagens. In "Proceedings of 3rd International Conference on Environmental Mutagens," Tokyo University Press, Alan E. Liss, Inc., pp. 463-474, 1982.

R. J. Preston, The use of inhibitors of DNA repair in the study of the mechanisms of induction of chromosome aberrations, *Cytogenet. Cell Genet.* 33: 20-26, 1982.

M. W. Heartlein, J. P. O'Neill, B. C. Pal and R. J. Preston, The induction of specific locus mutations and sister chromatid exchanges by 5-bromo- and 5-chloro-deoxyuridine, *Mutat. Res.* 92: 411-416, 1982.

R. J. Preston, Cytogenetic studies in animals. In "Proceedings of Symposium on Genetic Toxicology: An Agricultural Perspective," ed. by R. A. Fleck and A. Hollaender, Plenum Publishing Corp., pp. 379-388, 1982.

R. J. Preston, Chromosome aberrations in decondensed sperm DNA, Banbury Report 13: Indicators of Genotoxic Exposure, Cold Spring Harbor Laboratory, 1982.

R. J. Preston, The use of human lymphocyte assay for the cytogenetic analysis of human populations. In "Proceedings of the Ethylene Oxide Worker Safety Seminar," J. F. Jorkasky, Ed., HIMA, Washington, pp. 57-84, 1982.

M. W. Heartlein, J. P. O'Neill and R. J. Preston, SCE induction is proportional to substitution in DNA for thymidine by CldU and BrdU, *Mutat. Res.* 107: 103-109, 1983.

J. P. O'Neill, M. W. Heartlein and R. J. Preston, Sister-chromatid exchanges and gene mutations are induced by the replication of 5-bromo- and 5-chloro-deoxyuridine substituted DNA, *Mutat. Res.* 109: 259-270, 1983.

R. J. Preston, Radiation damage to DNA and its repair in the formation of chromosome aberrations. In "Radiation-Induced Chromosome Damage in Man," Chapter 6, Alan R. Liss, Inc., New York, New York, pp. 111-125, 1983.

C. W. Heath, M. R. Nadel, M. M. Zack, C. D. Stutzman, A.T.L. Chen, R. D. Kimbrough, D. C. VanderMeer, J. Figler, M. A. Bender, R. P. Kale, M. S. Makar, B. E. Pyatt, R. J. Preston, W. W. Au, P. C. Gooch, T. Ho and H. Luippold, A study of cytogenetic patterns in persons living near the Love Canal, U. S. Department of Health and Human Services Report, 1983.

R. J. Preston, Intrinsic factors that can affect sensitivity to chromosome aberration induction. In "American-Swedish Workshop," W. Sheridan and F. J. de Serres, R. W. Pero and W. Sheridan, Eds., Plenum Publishing Corp., pp. 201-210, 1984.

C. W. Heath, M. R. Nadel, M. M. Zack, A.T.L. Chen, M. A. Bender and R. J. Preston, Cytogenetic finding in persons living near the Love Canal, *JAMA* 25: 1437-1440, 1984.

R. J. Preston, Cytogenetic abnormalities as an indicator of mutagenic exposure. In "Single Cell Mutation Monitoring Systems: Methodologies and Applications," A. Ansari and F. J. de Serres, Eds., Plenum Publishing Co., pp. 127-143, 1984.

W. W. Au, J. P. O'Neill, W. Wang, H. E. Luippold and R. J. Preston, Induction of chromosome aberrations and specific locus mutation but not sister chromatid exchanges in Chinese hamster ovary cells by neocarzinostatin, *Teratogenesis, Carcinogenesis, and Mutagenesis* 4: 515-522, 1984.

M. W. Heartlein and R. J. Preston, The effect of 3-aminobenzamide on the frequency of X-ray- or neutron-induced chromosome aberrations in cycling or non-cycling human lymphocytes, *Mutat. Res.* 148: 91-97, 1985.

R. Julian Preston, Use of cytogenetic endpoints in human lymphocytes as indicators of exposure to genotoxicants. In "New Approaches in Toxicity Testing and Their Application in Human Risk Assessment," ed. by A. P. Li, Raven Press, New York, pp. 41-50, 1985.

M. W. Heartlein and R. J. Preston, An explanation of interspecific differences in sensitivity to X-ray-induced chromosome aberrations and a consideration of dose-response curves, *Mutat. Res.* 150: 299-305, 1985.

M. J. Aardema, W. W. Au, R. E. Hand, Jr. and R. J. Preston, Differential sensitivity of a mouse myeloid leukemia cell line and normal mouse bone marrow cells to X-ray-induced chromosome aberrations, *Cancer Res.* 45: 5321-5327, 1985.

R. J. Preston (co-author), WHO "Guidelines for the study of genetic effects in human populations," *Environmental Health Criteria* 46, Geneva, 126 pp., 1985.

J. B. Mailhes, R. J. Preston and K. S. Lavappa, Mammalian *in vivo* assays for aneuploidy in female germ cells, *Mutat. Res.* 167: 139-148, 1986.

J. M. Allen, J. C. Liang, A. V. Carrano and R. J. Preston, Review of the literature on chemical-induced aneuploidy in mammalian male germ cells, *Mutat. Res.* 167: 123-137, 1986.

R. J. Preston (co-author), Biological Dosimetry: Chromosomal Aberration Analysis for Dose Assessment, Technical Report Series No. 260, International Atomic Energy Agency, Vienna, 1986.

M. K. Smith, H. Zenick, R. J. Preston, E. L. George and R. E. Long, Dominant lethal effects of subchronic acrylamide administration in the male Long-Evans rat, *Mutat. Res.* 173: 273-277, 1986.

M. J. Aardema and R. J. Preston, DNA-repair kinetics and the sensitivity of cells to X-ray-induced chromosome aberrations: A mouse myeloid leukemia cell line and normal mouse bone marrow cells, *Mutat. Res.* 162: 225-232, 1986.

R. J. Preston, B. J. Dean, S. Galloway, H. Holden, A. F. McFee and M. Shelby, Mammalian *in vivo* cytogenetic assays, Analysis of chromosome aberrations in bone marrow cells, *Mutat. Res.* 189: 157-165, 1987.

R. J. Preston, J. R. San Sebastian and A. F. McFee, The *in vitro* human lymphocyte assay for assessing the clastogenicity of chemical agents, *Mutat. Res.* 189: 175-183, 1987.

R. L. Ullrich and R. J. Preston, Myeloid leukemia in male RFM mice following irradiation with fission spectrum neutrons or gamma rays, *Radiat. Res.* 109: 165-170, 1987.

M. A. Bender, A. A. Awa, A. L. Brooks, H. J. Evans, P. G. Groer, L. G. Littlefield, C. Pereira, R. J. Preston and B. W. Wachholz, Current status of cytogenetic procedures to detect and quantify previous exposures to radiation, *Mutat. Res.* 196: 103-159, 1988.

R. A. Winegar and R. J. Preston, The induction of chromosome aberrations by restriction endonucleases that produce blunt-end or cohesive-end double-strand breaks, *Mutat. Res.* 197: 141-149, 1988.

J. B. Mailhes, R. J. Preston, Z. P. Yuan and H. S. Payne, Analysis of mouse metaphase II oocytes as an assay for chemically-induced aneuploidy, *Mutat. Res.* 198: 145-152, 1988.

M. A. Bender, R. J. Preston, R. C. Leonard, P. C. Gooch and M. D. Shelby, Chromosomal aberration and sister chromatid exchange frequencies in peripheral blood lymphocytes of a large human population sample, *Mutat. Res.* 204: 421-433, 1988.

M. A. Bender, R. J. Preston, R. C. Leonard, B. E. Pyatt and P. C. Gooch, Chromosomal aberration and sister-chromatid exchange frequencies in peripheral blood lymphocytes of a large human population sample. II. Extension to age range, *Mutat. Res.* 212: 149-154, 1989.

R. J. Preston, A short journey from classical to molecular cytogenetics, *Environ. Mol. Mutagen.* 14: 126-132, 1989 (Special Anniversary Invited Review Series).

S. Mitra, M. O. Skipi, R. J. Preston and L. C. Waters, Nonrandom distribution of mutations induced by X rays in a plasmid target in human cells. In "Multilevel Health Effects Research: From Molecules to Man," ed. by J. F. Park and R. A. Pelroy, Battelle Press, Richland, Washington, pp. 67-80, 1989.

Liane B. Russell and R. Julian Preston, Genetics research in the Biology Division, *ORNL Review* 22: 12-15, 1989.

R. Julian Preston, Chromosome alterations and cancer, *ORNL Review* 22: 16-19, 1989.

M. O. Sikpi, L. C. Waters, K. H. Kraemer, R. J. Preston and S. Mitra, N-methyl-N-nitrosourea-induced mutations in a shuttle plasmid replicated in human cells, *Mol. Carcin.* 3: 30-36, 1990.

R. J. Preston, The potential mutagenicity of styrene and its metabolites, *The SIRC Review* Vol. 1, No. 1, pp. 25-31, 1990.

M. A. Bender, R. J. Preston, R. C. Leonard, B. E. Pyatt and P. C. Gooch, On the distributions of spontaneous chromosomal aberrations in human peripheral blood lymphocytes in culture, *Mutat. Res.* 244: 215-220, 1990.

R. J. Preston, Mechanisms of induction of chromosomal alterations and sister chromatid exchanges: Presentation of a general hypothesis. In "Genetic Toxicology: A Treatise," ed. by A. P. Li and R. H. Heflich, Telford Press, in press.

R. J. Preston, Mechanisms of induction of specific chromosomal alterations. In "DNA Damage and Repair in Human Tissues," ed. by B. Sutherland and A. Woodhead, Plenum Press, in press.

R. J. Preston, Styrene (vinyl benzene) and its metabolites - A discussion of results from assays for detecting chromosomal aberrations and sister chromatid exchanges, *The SIRC Review*, in press.

Larry C. Waters, Matthew O. Sikpi, R. Julian Preston, Sankar Mitra and Armin Jaberaboansari, Mutations induced by ionizing radiation in a plasmid replicated in human cells - Similar, Nonrandom Distribution of Mutations in Unirradiated and X-irradiated DNA, submitted to *Journal of Molecular Biology*.

H. W. Chung, J. W. Phillips, R. A. Winegar, R. J. Preston, and W. F. Morgan, Modulation of restriction enzyme-induced damage by compounds that interfere with cellular responses to DNA damage: A cytogenetic and pulsed field gel analysis, submitted to *Radiation Research*.

R. J. Preston, Biological Dosimetry: Mechanistic Concepts, Proceedings of First International Conference on Biological Dosimetry, Madrid, Spain, December 1990.