RARAF Publications

This list does not include papers given at scientific meetings unless published in proceedings.

1. Amundson, S.A., Do, K.T., Vinikoor, L., Koch-Paiz, C.A., Bittner, M.L., Trent, J.M., Meltzer, P. and Fornace, A.J. Jr. Stress-specific signatures: Expression profiling of p53 wild-type and null human cells. Oncogene **24**: 4572-4579 (2005).
2. Amundson, S.A., Lee, R.A., Koch-Paiz, C.A., Bittner, M.L., Meltzer, P., Trent, J.M. and Fornace, Jr, A.J. Differential responses of stress genes to low dose-rate α-irradiation. Molecular Cancer Res. **1:** 445-452 (2003).
3. Apfel, R.E. Characterization of new passive superheated drop (bubble) dosimeters. In *Proceedings of the Seventh Symposium on Neutron Dosimetry* (R. Jahr, et al., Eds.), Radiat. Prot. Dosim. **44** (1-4), 343-346, Nuclear Technology Publishing, Kent, England, 1992.
4. Apfel, R. and Lo, Y.C. Progress in the design of neutron dosimeters using superheated drops. Nucl. Sci. J. **26**: 56-62 (1989).
5. Apfel, R. and Lo, Y.C. Practical neutron dosimetry with superheated drops. Health Phys. **56**, 79-83 (1989).
6. Aprile, E., Baudis,L., Choi, B., Giboni, K.L., Lim, K., Manalaysay, A., Monzani, M.E., Plante, G., Santorelli, R. and Yamashita, M. New measurement of the relative scintillation efficiency of xenon nuclear recoils below 10 keV. Phys. Rev. C **79**: 045807 (2009).
7. Aprile, E., Giboni, K.L., Majewski, P., Ni, K., Yamashita, M., Hasty, R., Manzur, A., and McKinsey, D.N. Scintillation Response of Liquid Xenon to Low Energy Nuclear Recoils. Phys. Rev. D **72**: 072006 (2005).
8. Azziz, N., Ranogajec-Komor, M., Marino, S.A., Klemic, G.A. and Osvay, M. Fast neutron detection using aluminum oxide TLDs. In *Proc. of the IRPA Regional Symposium on Radiation Protection in Neighboring Countries of Central Europe* (J. Sabol, Ed.) pp. 495-497, Prague, Czech Republic, 1997.
9. Bailey, S.M. Michael Fry Research Award lecture: Telomeres and Double-strand Breaks – All's Well That Ends Well. Radiat. Res. **169**: 1-7 (2008).
10. Bailey, S.M. and Cornforth, M.N. Telomeres and DSBs – ever the twain shall meet? Cell. Mol. Life Sci. **64**: 2956-2964 (2007).
11. Balajee, A.S. and Geard, C.R. Chromatin bound PCNA complex formation triggered by DNA damage occurs independent of the ATM gene product in human cells. Nucleic Acids Res. **29**: 1341-1351 (2001).
12. Balajee, A.S., Geard, C.R. Replication protein A and gamma-H2AX foci assembly is triggered by cellular response to DNA double-strand breaks. Exp Cell Res. **300**: 320-334 (2004).

13. Balajee, A.S., Ponnaiya, B., Baskar, R. and Geard, C.R. Induction of replication protein A in bystander cells. Radiat. Res. **162**: 677-686 (2004)

14. Bateman, J.L., Rossi, H.H., Kellerer, A.M., Robinson, C. and Bond, V.P. Dose-dependence of fast neutron RBE for lens opacification in mice. Radiat. Res. **51**: 381-390 (1972).

15. Belyakov, O.V., Mitchell, S.A., Parikh, D., Randers-Pehrson, G., Marino, S.A., Amundson, S.A., Geard, C.R. and Brenner, D.J. Biological effects in unirradiated human tissue as a response to radiation damage up to 1 mm away. Proc. Nat. Acad, Sci. USA **102**: 14203-14208 (2005).

16. Bengtsson, L.G., Goodman, L.J., Marino, S.A. and Robertson, J.S. Computer evaluation of monoenergetic neutron irradiations in radiobiology. Health Physics **18**: 577 (1970).

17. Bertucci, A., Pocock, R., Randers-Pehrson, G. and Brenner, D.J. Microbeam irradiation of the *C. elegans* nematode. J. Radiat. Res. **50**: Suppl., A49-A54 (2009).

18. Bigelow, A.W., Brenner, D.J., Garty, G. and Randers-Pehrson, G. Single-particle / single-cell ion microbeams as probes of biological mechanisms (Review article). IEEE T. Plasma Sci. **36**: 1424-1431 (2008).

19. Bigelow, A., Garty, G., Funayama, T., Randers-Pehrson, G., Brenner, D. and Geard, C. Expanding the question-answering potential of single-cell microbeams at RARAF, USA, Radiat. Res. **50**:Suppl., A21-A28 (2009) PMCID: PMC2924733.

20. Bigelow A.W., Geard, C.R. Randers-Pehrson, G and Brenner, D.J. Microbeam-Integrated Multiphoton Imaging System. Rev. Sci. Instrum. **79**: 123707 (2008).

21. Bigelow, A.W., Randers-Pehrson, G. and Brenner, D.J. Laser ion source development for the Columbia University microbeam. Rev. Sci. Instrum. **73**: 770-772 (2002).

22. Bigelow A.W., Randers-Pehrson, G. and Brenner, D.J. Proposed laser ion source for the Columbia University microbeam. *9th International Conference on Nuclear Microprobe Technology and Applications, ICNMTA 2002*. Nucl. Instr. Meth. B **210**: 65-69 (2003).

23. Bigelow, A.W., Randers-Pehrson, G. and Brenner D.J. Laser Ion Source Design for the Columbia University Microbeam. *6th International Workshop on Microbeam Probes of Cellular Radiation Response*, Oxford, UK, March 29-31, 2003.

24. Bigelow, A.W., Randers-Pehrson, G., Kelly, R.P. and Brenner, D.J. Laser Ion Source for Columbia University's Microbeam. Nucl. Instr. Meth. B **241**: 874-879 (2005).

25. Bigelow, A.W., Randers-Pehrson, G., Michel, K.A. Brenner D.J., and Dymnikov, A.D. Sample targeting during single-particle single-cell irradiation. *AIP Conference Proceedings for the Seventeenth International Conference on the Application of Accelerators in Research and Industry (CAARI)*, Denton, Texas, November 12-16, 2002. AIP Conference Proceedings **680**: 347-350 (2003).

26. Bigelow, A.W., Ross, G.J., Randers-Pehrson, G. and Brenner, D.J. The Columbia University Microbeam II endstation for cell imaging and irradiation. Nucl. Instr. Meth. B **231**: 202-206 (2005).

27. Bird, R.P. Biophysical studies with spatially correlated ions: 3. Cell survival studies using diatomic deuterium. Radiat. Res. **78**: 210-223 (1979).

28. Bird, R.P. Cysteamine as a protective agent with high-let radiations. Radiat. Res. **82**: 290-296 (1980).

29. Bird, R.P., Rohrig, N., Colvett, R.D., Geard, C.R., and Marino, S.A. Inactivation of synchronized chinese hamster V79 cells with charged-particle track segments. Radiat. Res. **82**: 277-289 (1980).

30. Bird, R.P., Zaider, M., Rossi, H.H., Hall, E.J., Marino, S.A. and Rohrig, N. The sequential irradiation of mammalian cells with x rays and charged particles of high LET. Radiat. Res. **93**: 444-452 (1983).

31. Bond, V.P. Dose, effect severity and imparted energy in assessing biological effects. Stem Cells **13 Suppl 1**: 21-9 (Review) (1995).

32. Bond, V.P, Benary, V., Sondhaus, C.A. and Feinendegen, L.E. The meaning of linear dose-response relations, made evident by use of absorbed dose to the cell. Health Physics **68**: 786-792 (1995).

33. Bond, V.P., Cronkite, E.P., Bullis, J.E., Wuu, C.S., Marino, S.A. and Zaider, M. An HSEF for murine myeloid leukemia. In *Microdsimetry, An Interdisciplinary Approach* (D.T. Goodhead and H.G. Menzel, Eds.) pp.228-231, The Royal Society of Chemistry, Cambridge, U.K., 1997.

34. Bond, V.P., Varma, M., Feinendegen, L.E, Wuu, C.S. and Zaider, M. Application of the HSEF to assesing radiation risks in the practice of radiation protection. Health Physics **68**: 627-631 (1995).

35. Bond, V.P., Wielopolski, L. and Shani, G. Current misinterpretations of the linear, non-threshold hypothesis. Health Physics **70**: 877-882 (1996).

36. Borek, C. In vitro cell transformation by low doses of x irradiation and neutrons. In *The Biology of Radiation Carcinogenesis* (J. Yuhas, R. W. Tennant and J. D. Regan, Eds.), pp. 309-325, Raven Press, New York, 1976.

37. Borek, C., Hall, E.J. and Rossi, H.H. Malignant transformation in cultured hamster embryo cells produced by x rays, 430 keV monoenergetic neutrons and heavy ions. Cancer Res. **38**: 2997-3005 (1978).

38. Böyum, A., Carsten, A.L., Chikkappa, G., Cook, L., Bullis, J., Honikel, L. and Cronkite, E.P. The r.b.e. of different neutrons as determined by human bone-marrow cell-culture techniques. Int. J. Radiat. Biol. **34**: 201-212 (1978).

39. Brenner, D.J. Confidence limits for low induced frequencies of oncogenic transformation in the presence of a background. Int. J. Radiat. Biol. **57**: 1031-45 (1990).

40. Brenner, D.J. Significance of neutrons from the atomic bombs at Hiroshima for revised radiation risk estimates. Health Physics **60**: 439-442 (1991).

41. Brenner, D.J. Radon - Current challenges in cellular radiobiology. Int. J. Radiat. Biol. **6**: 3-13 (1992).

42. Brenner, D.J. Editor, Proceedings of the 4th International Workshop: Microbeam probes of cellular radiation response. Radiat. Res. **153**: 220-238 (2000).

43. Brenner, D.J. Editor, The 7th International Workshop on Microbeam Probes of Cellular Radiation Response. Radiat. Res. **166**: 652-689 (2006).

44. Brenner, D.J. Rutherford, the Curies, and radon. Med. Phys. **27**: 618 (2000).

45. Brenner, D.J. and Elliston, C.D. The potential impact of the bystander effect on radiation risks in a Mars mission. Radiat. Res **156**: 612-617 (2001).

46. Brenner, D.J. and Hall, E.J. The inverse dose-rate effect for oncogenic transformation by neutrons and charged particles: a plausible interpretation consistent with published data. Int. J. Radiat. Biol. **58**: 745-58 (1990).

47. Brenner, D.J. and Hall, E.J. Radiation-induced oncogenic transformation: the interplay between dose, dose protraction, and radiation quality. Advan. Radiat .Biol. **16**, 167-169 (1992).

48. Brenner, D.J. and Hall, E.J. Microbeams: A potent mix of physics and biology. Rad. Protec. Dosim. **99**: 283-286 (2002).

49. Brenner, D.J., Hall, E.J., Randers-Pehrson, G. and Miller, R. C. Model considerations on the dose-rate/LET dependence of oncogenic transformation by charged particles. Radiat. Res. **133**: 365-369 (1993).

50. Brenner, D.J., Little, J.B.and Sachs, R.K. The Bystander effect in radiation oncogenesis: II. A quantitative model. Radiat. Res. **155** 402-408 (2001).

51. Brenner, D.J., Miller, R.C., Huang, Y. and Hall, E.J. The biological effectiveness of radon-progeny alpha particles. III. Quality factors, Radiat. Res. **142**: 61-69 (1995).

52. Brenner, D.J., Miller, R.C., Marino, S.A., Geard, C.R., Randers-Pehrson, G. and Hall, E.J. Inverse dose rate effects for neutrons: General features and biophysical consequences. In *Proceedings of the Seventh Symposium on Neutron Dosimetry* (R. Jahr, et al., Eds.), Radiat. Prot. Dosim. **44** (1-4): 45-48, Nuclear Technology Publishing, Kent, England, 1992.

53. Brenner, D.J., Miller, R.C., Marino, S.A., Geard, C.R., Randers-Pehrson, G., and Hall, E.J. Dose rate effects for oncogenesis by medium LET radiations. In *Low Dose Irradiation and biological Defense Mechanisms*, Elsevier Science Publishers, Amsterdam, 1992.

54. Brenner, D.J. and Sachs, R.K. Are bystander effects relevant for domestic radon exposure risk estimation? Int. J. Radiat. Biol. **78**: 593-604 (2002).

55. Brenner, D.J. and Sacks, R.K. Are bystander effects important? *6th International Workshop on Microbeam Probes of Cellular Radiation Response,* Oxford, UK, March 29-31, 2003.

56. Brenner, D.J. and Sacks, R.K. Domestic radon risks may be dominated by bystander effects – but the risks are unlikely to be greater than we thought. Health Phys. **85**: 105-108 (2003).

57. Brenner, D.J., Sawant, S.G., Hande, P., Miller, R.C., Elliston, C.D., Fu, Z., Randers-Pehrson, G. and Marino, S.A. Routine screening mammography: How important is the radiation-risk side of the benefit-risk equation? Int. J. Radiat. Biol. **78**: 1065-1067 (2002).

58. Calaf GM, Emenaker NJ, Hei TK. Effect of retinol on radiation- and estrogen-induced neoplastic transformation of human breast epithelial cells. Oncol Rep. **13**: 1017-27 (2005).

59. Calaf, G.M. and Hei, T.K. Establishment of a radiation and estrogen-induced breast cancer model. Carcinogenesis **21**: 769-776 (2000).

60. Calaf, G., and Hei, T.K. Oncoprotein expression in human breast epithelial cells transformed by high LET radiation. Int. J. Radiat. Biol. **77**: 31-40 (2001).

61. Calaf GM, Roy D, Hei TK. Immunochemical analysis of protein expression in breast epithelial cells transformed by estrogens and high linear energy transfer (LET) radiation. Histochem. Cell Biol. **124**: 261-74 (2005).

62. Calaf G.M., Roy D., Hei T.K. Growth factor biomarkers associated with estrogen- and radiation-induced breast cancer progression. Int J Oncol. **28**: 87-93 (2006).

63. Carsten, A.L., Bond, V.P. and Thompson, K. RBE of different energy neutrons as measured by the haematopoetic spleen colony technique. Int. J. Radiat. Biol. **29**: 65-70 (1976).

64. Caswell, R.S., Goodman, L.J. and Colvett, R.D. International intercomparison of neutron dosimetry. In *Radiation Research: Biomedical, Chemical and Physical Perspectives* (O. F. Nygaard, H. I. Adler and W. K. Sinclair, Eds.), pp. 532-546, Academic Press, New York, 1975.

65. Colvett, R.D. and Rohrig, N. Biophysical studies with spatially correlated ions: 2. Multiple scattering, experimental facility, and dosimetry. Radiat. Res.**78**: 192-209 (1979).

66. Cornforth M.N., Greulich-Bode K.M., Loucas B.D., Arsuaga J., Vazquez M., Sachs R.K., Bruckner M., Molls M., Hahnfeldt P., Hlatky L., Brenner D.J. Chromosomes are predominantly located randomly with respect to each other in interphase human cells. J Cell Biol. **159**: 237-244 (2002).

67. Cronkite, E.P., Tohru, I. and Bullis, J.E. Influence of radiation fractionation on survival of mice and spleen colony-forming units. Radiat. Res. **138**: 266-271 (1994).

68. d'Errico, F. and Apfel, R.A. A new method for neutron depth-dosimetry with the superheated drop detector. Radiat. Prot. Dosim. **30**: 101-106 (1990).

69. DeWyngaert, J.K., Leith, J.T., Peck, R.A. Jr, Bliven, S.F., Zeman, E.M., Marino, S.A. and Glicksman A.S. Differential RBE values obtained for mammary adenocarcinoma tumor cell subpopulations after 14.8-MeV neutron irradiation. Radiat Res. **88**:118-131 (1981).

70. Dobson, R.L., Straume, T., Kwan, T.C., Uhl, V. and Goldstein, L.S. Mutational sensitivity of mouse immature oocytes measured with low doses of neutrons and 2 genetic endpoints. Environ. Mutagenesis **11** (Supplement 11): 29 (1988).

71. Dymnikov, A.D., Brenner, D.J., Johnson, G. and Randers-Pehrson, G. Theoretical study of short electrostatic lens for the Columbia ion microprobe. Rev. Sci. Inst. **71**: 1646-1650 (2000)

72. Dymnikov, A.D., Brenner, D.J., Johnson, G.W. and Randers-Pehrson, G. Electrostatic lens design for the Columbia microbeam. Radiat. Res. **153**, 236-237 (2000).

73. Ettinger, K.V., Anunuso, C.I., Miola, U.J., Fairchild, R.G., and Marino, S. Neutron response of some lyoluminescent phosphors. Presented at the International Symposium on Biomedical Dosimetry: Physical Aspects, Instrumentation, Calibration. Paris, France, October 27-31 (1980).

74. Freyer, G.A., Palmer, D.A., Yu, Y., Miller, R.C. and Pandita, T.K. Neoplastic transformation of mouse C3H 10T1/2 cells following exposure to neutrons does not involve mutation of ras gene as analyzed by SSCP and cycle sequencing. Mutat. Res. **357**: 237-244 (1996).

75. Fuks, E., Horowitz, Y.S., Horowitz, A., Oster, L., Marino, S., Rainer, M., Rosenfeld, A. and Datz, H. Thermoluminescence solid state nanodosimetry – the peak 5a/5 dosimeter. Radiat. Prot. Dosim. **143**: 416-426 (2011) PMCID: PMC310827.

76. Galea, R. Caldwell, A. and Newburgh, L. A frictional cooling demonstration using protons. Nucl. Inst. Meth. A **524**: 27-38 (2004).

77. Garcia-España, A., Kahn, J.M., Saez, G. and Pellicer, A. Mutagenic effects of tumorigenic neutron radiation. Int. J.Cancer **65**: 677-681 (1996).

78. Garty, G., Grad, M., Jones, B.K., Xu, Y., Randers-Pehrson, G., Attinger, D. and Brenner, D.J. Design of a novel flow-and shoot (FAST) microbeam, Radiat. Prot. Dosimetry **143**: 344-348 (2011) PMCID: PMC3108275.

79. Garty, G., Randers-Pehrson, G. and Brenner, D.J. Development of a secondary-electron ion-microscope for microbeam diagnostics. Nucl. Instrum. Meth. B **231**: 60-64 (2005).

80. Garty, G., Ross, G.J., Bigelow A., Randers-Pehrson, G. and Brenner, D.J. A microbeam irradiator without an accelerator. Nucl. Instrum. Meth. B **241**: 392-396 (2005).

81. Garty, G., Ross, G.J., Bigelow, A.W., Randers-Pehrson, G. and D.J. Brenner. Testing the Stand-Alone Microbeam at Columbia University. Radiat. Prot. Dos. **122**: 292-296 (2006).

82. Geard, C.R. Microdosimetry and chromosome aberrations: Effects of 230 keV neutrons on *Vicia faba* chromosomes. Mutat. Res. **44**: 345-358 (1977).

83. Geard, C.R. Microdosimetry and chromosome aberrations for monoenergetic neutrons. In *Proceedings of the Sixth Symposium on Microdosimetry*, Vol. 2 (J. Booz and H. Ebert, Eds.), pp. 883-894, Harwood Academic Publishers, Ltd., London, 1978.

84. Geard, C.R. Effects of 1.9 MeV Monoenergetic Neutrons on Vicia faba Chromosomes: Microdosimetric Considerations. Radiat. and Environ. Biophys. **18**: 79-89 (1980).

85. Geard, C.R. Charged particle fluence and cellular morphometric inter-relationships for linear energy transfer effect on progression through the cell cycle. In *Proceedings of the Eighth Symposium on Microdosimetry* (J. Booz and H.G. Ebert, Eds.), pp. 695-706. Commission of the European Communities, Luxembourg, 1982.

86. Geard, C.R. Chromosomal aberration production by "track segment" charged particles as a function of linear energy transfer. In *Proceedings of the Ninth Symposium on Microdosimetry* (J.A. Dennis, J. Booz and B. Bauer, Eds.), Radiat. Prot. Dosim. **13**(1-4): 199-204, Nuclear Technology Publishing, Kent, England, 1985.

87. Geard, C.R. Charged particle cytogenetics: Effects of LET, fluence, and charged particle separation on chromosome aberrations. Radiat. Res. **104** Suppl. 8: S112-S121 (1985).

88. Geard, C.R. Chromosomal aberrations per charged particle per cell nucleus: Studies at the Radiological Research Accelerator Facility. Nucl. Instr. Meth. **40/41**: 1372-75 (1989).

89. Geard, C.R. Induction of sister chromatid exchanges as a function of charged-particle linear energy transfer. Radiat. Res. **134**: 187-192 (1993).

90. Geard, C.R. Neutron induced recoil protons of restricted energy and range and biological effectiveness. Health Physics **70**: 804-811 (1996).

91. Geard, C.R. Cellular responses to low doses using modern microbeams. Proceedings of the *Workshop on Networking Radiation Sciences in Health, Safety, and the Environment*, McMaster University, Hamilton, Ontario, November 25-26, 2002. To be published in Radiat. Res.

92. Geard, C.R. and Brenner, D.J. Chromosomal changes per cell nucleus per charged particle. In *Proceedings of the Tenth Symposium on Microdosimetry* (J. Booz, J.A. Dennis and H. Menzel, Eds.), Radiat. Prot. Dosim. **31**(1-4): 285-290, Nuclear Technology Publishing, Kent, England, 1990.

93. Geard, C.R., Brenner, D.J., Randers-Pehrson, G. and Marino, S.A. Single particle irradiation of mammalian cells at the Radiological Research Accelerator Facility: Induction of chromosomal changes. Nucl. Inst. Meth. **B54**: 411-416 (1991).

94. Geard, C.R., Colvett, R.D. and Rohrig, N. On the mechanics of chromosomal aberrations: A study with single and multiple, spatially-associated protons. Mutat. Res. **69**: 81-99 (1980).

95. Geard, C.R., Jenkins-Baker, G., Bigelow, A., Brenner, D.J., Hall, E.J., Hei, T.K., Marino, S., Randers-Pehrson, G. and Ponnaiya, B. Single cell gene expression and microbeam irradiation: the concept of the average cell. *6th International Workshop on Microbeam Probes of Cellular Radiation Response*, Oxford, UK, March 29-31, 2003.

96. Geard, C.R., Jenkins-Baker, G., Marino, S.A., and Ponnaiya, B. Novel approaches with track segment alpha particles and cell co-cultures in studies of bystander effects. 13th Symposium on Microdosimetry, Stresa, Italy, May 26-June 1, 2001. Radiat. Prot. Dosim. **99**: 233-236 (2002).

97. Geard, C.R. and Loucas, B.D. Physical interaction of ionizing radiations with the intracellular macromolecular target DNA and its biological consequences. Radiat. Prot. Dosim. **61**: 101-106 (1995).

98. Geard, C.R. and Marino, S. Radiation induced delays in cell progression in *Vicia faba* root meristems. Radiat. Res. **69**: 530-540 (1977).

99. Geard, C.R., Miller, R.C., Brenner, D.J. and Hall, E.J. Oncogenic transformation through the cell cycle and the LET dependent inverse dose rate effect. In *Proceedings of the Eleventh Symposium on Microdosimetry* (H.G. Menzel, et al., Eds.), Radiat. Protect. Dosim. **52**: 367-371 (1994).

100. Geard C.R. and Ponnaiya B. Chromosomal changes and cell cycle checkpoints in Mammalian cells. Methods Mol. Biol. **241**: 315-328 (2004).

101. Geard, C.R., Ponnaiya, B., Jenkins-Baker, G., Hei, T.K., Brenner, D.J., Hall, E.J. and Randers-Pehrson, G. Microbeam mediated cellular effects*:* Observations and implications for low dose radiation risk assessment. In *Molecular Mechanisms for Radiation-induced Cellular Response and Cancer Developmen*t, Tanaka, K., Takabataka, T., Fujikawa, K., Matsumoto, T. and Sato, F., Eds. Institute for Environmental Science, Japan, p. 82-88, 2002.

102. Geard, C.R., Povlas, S. and Marino, S. Monoenergetic neutron induced effects on cell progression in broad bean roots. Radiat. Res. **73**: 160-167 (1978).

103. Geard, C.R., Randers-Pehrson, G., Hei, T.K., Jenkins, G.J., Miller, R.C., Wu, L.J. Brenner, D.J. and Hall, E.J. Microbeam mediated cellular effects: single α particle induced chromosomeal damage, cell cycle delay, mutation and oncogenic trasformation. In *Microdsimetry, An Interdisciplinary Approach* (D.T. Goodhead and H.G. Menzel, Eds.) pp.327-330, The Royal Society of Chemistry, Cambridge, U.K., 1997.

104. Geard, C.R., Randers-Pehrson, G., Marino, S.A., Jenkins-Baker, G., Hei, T.K., Hall, E.J. and Brenner, D.J. Intra- and inter-cellular responses following cell-site specific microbeam irradiation. Radiat. Res. **153**: 233 (2000).

105. Geard, C.R. and Rossi, H.H. Chromosomal aberrations induced by random and associated charged particles. In *Proceedings of the Seventh Symposium on Microdosimetry* (J. Booz, H. Ebert, and H. Hartfield, Eds.), EUR 7147 DE-EN-FR, p. 959, Harwood Acad. Publishers, 1981.

106. Ghandhi, S.A., Ming, L., Ivanov, V.N., Hei, T.K. and Amundson, S.A. Regulation of early signaling and gene expression in the alpha-particle and bystander response of IMR-90 human fibroblasts. BMC Med. Genomics **3**: 31 (2010) PMCID: PMC2919438.

107. Ghandhi, S.A., Sinha, A., Markatou, M., and Amundson, S.A. Time-series clustering of gene expression in irradiated and bystander fibroblasts: an application of FBPA clustering BMC Genomics **12**: 2 (2011) PMCID: PMC3022823.

108. Ghandhi, S.A., Yaghoubian, B. and Amundson, S.A. Global gene expression analyses of bystander and alpha particle irradiated normal human lung fibroblasts: Synchronous and differential responses. BMC Medical Genomics **1**:63 (2008).

109. Goldhagen, P. and Randers-Pehrson, G. Variance-Covariance: A practical method for microdosimetry in submicroscopic volumes. In *Radiation Research: A Twentieth Century Perspective, volume II: Congress Proceedings* (W.C. Dewey, et al., Eds.), pp. 415-420, Academic Press, Inc., San Diego, 1992.

110. Goldhagen, P., Randers-Pehrson, G., Marino, S.A. and Kliauga, P. Variance-covariance measurements of y_d for 15-MeV neutrons in a wide range of site sizes. In *Proceedings of the Tenth Symposium on Microdosimetry* (J. Booz, J.A. Dennis and H. Menzel, Eds.), Radiat. Prot. Dosim. **31**(1-4): 167-170, Nuclear Technology Publishing, Kent, England, 1990.

111. Gonzalez, F.W. Dose-Response Kinetics of Genetic Effects Induced by 250 Kvp X Rays and 0.68 Mev Neutrons in Mature Sperm of *Drosophila melanogaster*. Ph.D. Thesis, University of Wisconsin, 1971.

112. Goodman, L.J. Neutron dosimetry at the Radiological Research Accelerator Facility. In *Proceedings of the Symposium on Neutron Dosimetry in Biology and Medicine*, ERUATOM 4896 d-f-e, **1**, pp. 177-210 (1972).

113. Goodman, L.J. Uncertainty analysis for dosimetry in a mixed field of neutrons and protons. Proceedings of the Second Symposium on Neutron Dosimetry in Biology and Medicine, Commission of the European Communities Report EUR 5273 d-f-e, pp. 227-236, 1975.

114. Goodman, L.J. Nonparametric analysis of an international neutron dosimetry intercomparison. In *Basic Physical Data for Neutron Dosimetry* (J.J. Broerse, Ed.), EUR 5629e, pp. 219-221, 1976.

115. Goodman, L.J., Brennan, J.T. and Marino, S.A. Minimum cyclotron size for radiation therapy: A study of relevant physical parameters. In *Uses of Cyclotrons in Chemistry, Metallurgy, and Biology*, p. 209-222, Butterworths, London 1970.

116. Goodman, L.J., Colvett, R.D. and Caswell, R.S. An international neutron dosimetry intercomparison. In *Proceedings of the Second Symposium on Neutron Dosimetry in Biology and Medicine*, Commission of the European Communities Report EUR 5273 d-e-f, pp. 627-659, 1975.

117. Goodman, L.J. and McDonald, J.C. Investigations into the thermal defect of tissue-equivalent plastic. . In *Basic Physical Data for Neutron Dosimetry* (J.J. Broerse, Ed.), EUR 5629e, pp. 129-131, 1976.

118. Guo, M., Chen, C., Vidair, C., Marino, S., Dewey, W.C. and Ling, C.C. Characterization of radiation-induced apoptosis in rodent cell lines. Radiat. Res. **147**: 295-303 (1997).

119. Hall, E.J. RBE and OER values as a function of neutron energy. Europ. J. Cancer **10**: 297-299 (1974).

120. Hall, E.J. The dependence of RBE and OER on neutron energy for damage to mammalian cells and plant systems. In *Radiation Research - Biomedical, Chemical and Physical Perspectives* (O.F. Nygaard, H.I. Adler and W.K. Sinclair, Eds.), pp. 1066-1072, Academic Press, Inc., New York, 1975.

121. Hall, E.J. How can biophysical models be tested experimentally? In *Biophysical Modeling of Radiation Effects* (K. H. Chadwick, G. Moschini and M.N. Varma, Eds.), Chapter 10, IOP Publishing, Ltd., U.K., 1991.

122. Hall, E.J., Failla Memorial Lecture. From beans to genes - back to the future. Radiat. Res. **129**: 235-249 (1992).

123. Hall, E.J. Genomic instability, bystander effect, cytoplasmic irradiation and other phenomena that may achieve fame without fortune. Physica Medica **17** Supp. 1: 21-25 (2001).

124. Hall, E.J. Genomic instability, bystander effect, cytoplasmic irradiation and other phenomena that may achieve fame without fortune. (Editors: R.Cirio, F.A. Cucinotta, M. Durante). In *Prodeedings of the 1st International Workshop on Space Radiation Research & 11th Annual NASA Space Radiation Health Investigators' Workshop*, Arona, Italy, May 2000. Physica Medica Vol. XV11: Supp. 1, 21-25 (2001).

125. Hall, E. J. Do no Harm: Normal tissue effects. (Review article). Acta Oncologica **40**: 913-916 (2001).

126. Hall, E.J. The bystander effect. Health Physics. **85**: 31-35 (2003).

127. Hall, E.J., *Cellular Damage Response*. British Nuclear Energy Society. (In press 2002).

128. Hall, E.J. How Many Bystander Effects Are There? *6th International Workshop on Microbeam Probes of Cellular Radiation Response*, Oxford, UK, March 29-31, 2003.

129. Hall, E.J. and Brenner, D.J. In vitro effects of high-LET radiation. Int. J. Radiat. Biol. **58**: 877-80 (1990).

130. Hall, E.J. and Brenner, D.J. The dose-rate effect revisited: Radiobiological considerations of importance in radiotherapy. Int. J. Radiat. Oncology Biol. Phys. **21**: 1403-1414 (1991).

131. Hall, E.J., and Brenner D.J. The dose-rate effect in interstitial brachytherapy: A controversy resolved. Br. J. of Radiol. **65**: 242-247 (1992).

132. Hall, E.J., Brenner, D.J., Hei, T.K. and Miller, R.C. The microdosimetric link between oncogenic-transformation data with neutrons and charged particles. In *Proceedings of the Tenth Symposium on Microdosimetry* (J. Booz, J.A. Dennis and H. Menzel, Eds.), Radiat. Prot. Dosim. **31**(1-4), 275-278, Nuclear Technology Publishing, Kent, England, 1990.

133. Hall, E.J. and Freyer, G.A. The moloecular biology of radiation carcinogenesis. In *Physical and Chemical Mechanisms in Molecular Radiation Biology* (W. A. Glass and M.N. Varma, Eds.), Plenum Press, New York, 1992.

134. Hall, E.J. and Hei, T.K. Oncogenic transformation *in vitro* by radiations of varying LET. In *Proceedings of the Ninth Symposium on Microdosimetry* (J.A. Dennis, J. Booz and B. Bauer, Eds.), Radiat. Prot. Dosim. **13**(1-4): 149-152 (1985).

135. Hall, E.J. and Hei, T.K. Modulating factors in the expression of radiation induced oncogenic transformation. Environ. Health Perspective **88**: 149-155 (1991).

136. Hall, E.J. and Hei, T.K. Oncogenic transforming potential of Etanidazole. Int. J. Radiat. Oncol. Biol. Phys. **22**: 743-745 (1992).

137. Hall, E.J., Hei, T.K. and Piao, C.Q. Transformation by simulated radon daughter alpha particles: interaction with asbestos and modulation by tumor promoters. In *Cell Transformation and Radiation-Induced Cancer* (K.H. Chadwick, C. Seymour, and B. Barnhart, Eds.), pp. 293-299, Adam Hilger, U.K., 1989.

138. Hall, E.J., Hei, T.K., and Randers-Pehrson, G. Radon-induced transformation. In *Anticarcinogenesis and Radiation Protection* (P.A. Cerutti, et al., Eds.), Plenum Publishers, 1988.

139. Hall, E.J., Miller, R.C. and Brenner, D.J. Neoplastic transformation and the inverse dose-rate effect for neutrons. Radiat. Res. **128**: S75-S80 (1991).

140. Hall, E.J., Novak, J.K., Kellerer, A.M., Rossi, H.H., Marino, S. and Goodman, L.J. RBE as a function of neutron energy. I. Experimental observations. Radiat. Res. **64**: 245-255 (1975).

141. Hall, E.J., Novak, J.K.and Marino, S.A. Comparative radiobiological measurements with two high-energy cyclotron-produced neutron beams presently used for radiotherapy Br J Radiol. **47**: 882-887 (1974).

142. Hall, E.J., Rossi, H.H., Kellerer, A.M., Goodman, L.J. and Marino, S. Radiobiological studies with monoenergetic neutrons. Radiat. Res. **54**: 431-443 (1973).

143. Hall, E.J. and Varma, M. An integrated model for radiation induced cancer (IMRIC), In *Biophysical Modeling of Radiation Effects* (K.H. Chadwick, G. Moschini and M. N. Varma, Eds.), Chapter 10, IOP Publishing, Ltd., U.K., 1991.

144. Hande MP, Azizova TV, Geard CR, Burak LE, Mitchell CR, Khokhryakov VF, Vasilenko EK, Brenner DJ. Past exposure to densely ionizing radiation leaves a unique permanent signature in the genome. Am. J. Hum. Genet. **72**: 1162-1170 (2003).

145. Harken, A.D., Randers-Pehrson, G., Johnson, G.W. and Brenner, D.J. The Columbia University proton-induce soft x-ray microbeam. Nucl. Inst. Meth. B **269**(18): 1992-1996 (2011) PMCID: PMC3146766.

146. Hartin, W.J. and Goodman, L.J. An improved safety system. Health Physics **20**: 73-81 (1971).

147. Hartin, W.J. and Goodman, L.J. Checking and monitoring safety system logic circuits. Health Physics **21**: 309-315 (1971).

148. Hei, T.K. Oncogenic transformation by asbestos fibers and radon-simulated alpha particles. In *Effects of Mineral Dusts on Cells*, NATO ASI Series, Vol. 30, pp. 389-397, Springer, Heidelberg, 1989.

149. Hei, T.K. Radiation and Asbestos Fibers: Cellular and Molecular Studies. In *Asbestos Related Cancer* (M.Sluyser, Ed.), pp. 133-146, Ellis, Jarwood, New York, 1991.

150. Hei, T.K., Cyclooxygenase-2 as a signaling molecule in radiation induced bystander effect. Mol. Carcinogenesis **45**: 455-460 (2006).

151. Hei, T.K., Ballas, L.K., Brenner, D.J. and Geard, C.R. Advances in radiobiological studies using a microbeam. J. Radiat. Res. **50** Suppl. A: A7-A12 (2009).

152. Hei, T.K., Radiation-Induced Bystander Effects: Mechanisms and Implication for Low-Dose Radiation Risk Assessment. Radiat. Res. **167**: 347-348 (2007).

153. Hei, T.K., Brenner, D.J. and Geard, C.R. Advances in Radiobiological Studies Using a Microbeam. J. Radiat. Res. **50** (in press).

154. Hei, T.K., Chen, D.K., Brenner, D.J. and Hall, E.J. Mutation induction by charged particles of defined LET. Carcinogenesis **9**: 1233-1236 (1988).

155. Hei, T.K. and Hall, E.J. In vitro oncogenic transformation at low doses and relevance to human cancer induction. In *Cell Transformation and Radiation-induced Cancer* (K.H. Chadwick, C. Seymour and B. Barnhart, Eds.), pp. 349-355, Adam Hilger, U.K., 1989.

156. Hei, T.K., Hall, E.J., and Waldren, C.A. Mutation induction and relative biological effectiveness of neutrons in mammalian cells (I.): experimental observations. Radiat. Res. **115**: 281-291 (1988).

157. Hei, T.K., Hall, E.J. and Waldren, C.A. Neutron risk assessment based on low dose mutation data. In *Low Dose Radiation - Biological Bases of Risk Estimation* (K.F. Beaverstock and J.W. Stather, Eds.), pp. 481-490, Taylor & Francis, London, 1989.

158. Hei, T.K., Komatsu, K., Hall E.J., and Zaider, M. Oncogenic transformation by charged particles of defined LET. Carcinogenesis **9**: 747-750 (1988).

159. Hei, T.K., Persaud, R., Zhou, H. and Suzuki, M. Genotoxicity in the eyes of bystander cells. Mutat. Res. **568**: 111-120 (2004).

160. Hei, T.K., Piao, C.Q., Han, E., Sutter, T. and Willey, J.C. Radon-induced neoplastic transformation of human bronchial epithelial cells. Radiat. Onc. Invest. **3**: 398-403 (1996).

161. Hei, T.K., Piao, C.Q., Sutter, T., Willey, J.C. and Suzuki, K. Cellular and molecular alterations in human epithelial cells transformed by high LET radiation. Adv. Space Res. **18**: 137-148 (1996).

162. Hei, T.K., Piao, C.Q., Willey, J.C., Thomas, S. and Hall, E.J. Malignant transformation of human bronchial epithelial cells by radon-simulated alpha particles. Carcinogenesis **15**: 431-437 (1994).

163. Hei, T. K., Piao, C.Q., Wu, L.X, Willey, J.C. and Hall, E.J. Genomic instability and tumorigenesis induction in immortalized human bronchial cells by heavy ions. Advan. Space Res. **22**: 1699-1707 (1999).

164. Hei, T. K., Roy, D., Piao, C.Q., Calaf, G. and Hall, E. J. Genomic instability in human epithelial cells transformed by high LET radiation. In: *Proceedings of Radiation Research* (Moriarty, M., Mothersill, C., Seymour, C., Edington, M., Ward, J. F. and Fry, R. J. M., Eds.), pp. 560-563, Allen Press, Lawrence, KS, 2000.

165. Hei, T.K., Wu, L.J., Liu, S.X., Vannais, D, Waldren, C.A. and Randers-Pehrson, G. Mutagenic effects of a single and an exact number of α particles in mammalian cells. Proc. Natl. Acad. Sci. USA **94**: 3765-3770 (1997).

166. Hei, T.K., Zhao, Y.L., Roy, D., Piao, C.Q., Calaf, C. and Hall, E.J. Molecular alterations in tumorigenic human bronchial and breast epithelial cells transformed by ionizing radiation. Adv. Space Res. **27**: 411-419 (2001).

167. Hei, T. K., Zhou, H., Chai, Y., Ponnaiya, B. and Ivanov, V. N. Radiation induced non-targeted response: mechanism and potential clinical implications. Curr. Mol. Pharmacol. **4**: 96-105 (2011).

168. Hei, T.K., Zhou, H., Ivanov, V.N. The Yin and Yang of low dose radiobiology. In: Nakashima, M., Takamura, N., Tsukasaki, K., Nagayama, Y., and Yamashita, S. (eds). Rdiation Health Risk Sciences. Springer, Tokyo, 2009, pp.135-142.

169. Hei, T.K., Zhou, H., Ivanov, V.N., Mei H., Lieberman, H.B., Brenner, D.J., Amundson, S.A. and Geard, C.R. Mechanism of radiation induced bystander effects: A unifying model. J. Pharm. Pharmacol. **60**: 943-950 (2008).

170. Hei, T.K., Zhou, H.Z., Lien, Y.C., and Zhao, Y.L., Mechanism of radiation carcinogenesis: BigH3, COX-2 and beyond. Int. Congress Series **1299**: 114-120 (2007).

171. Hei, T.K., Zhou, H.N., Wu, L.X., Randers-Pehrson, G., Waldren, C. and Geard, C.R. Radiation induced genotoxic damage: from cytoplasm to nucleus and the bystander phenomenon. In: *Free Radicals in Chemistry, Biology and Medicine*, Yoshikawa, T., Toyokuni, S., Naito, Y. and Yamamoto, Y., Eds.), pp. 241-247, OICA International Press, London, 2000.

172. Hei, T.K., Zhu, L.X., Chen, D.J. and Waldren, C.A. Mutagenic induction by low energy heavy ions: Cellular and molecular studies. Nucl. Sci. Techniques **8**: 107-113 (1997).

173. Hei, T.K., Zhu, L.X., Vannais, D. and Waldren, C.A., Molecular analysis of mutagenesis by high LET radiation. Adv. Space Res. **14**: 355-361 (1994).

174. Hei, T.K., Zhu, L.X. and Waldren, C.A. Molecular mechanisms of mutagenesis by radiation of different qualities. NATO ASI series 171-176 (1994).

175. Hong, J., Craig, W.W. and Hailey, C.J. Laboratory tests on neutron shields for gamma-ray detectors in space. Nucl. Inst. Meth. Phys. Res., Section A **452**: 192-204 (2000).

176. Hong, J., Hailey, C.J. and Craig, W.W. Development of neutron .shields in gamma-ray detectors. In *Proceedings of the SPIE*, 3445 (O. Siegmund and M. Gunmin, Eds.), 1998.

177. Hong, M., Xu, A., Zhou, H., Wu, L., Randers-Pehrson, G., Santella, R.M., Yu, Z. and Hei, T.K. Mechanism of genotoxicity induced by targeted cytoplasmic irradiation. Br. J. Cancer. **103**: 1263-1268 (2010) PMCID: PMC2967061.

178. Horowitz, Y.S., Horowitz, A., Oster, L., Marino, S., Datz, H. and Margaliot, M. Investigation of the Ionisation Density of the Glow Curve Characteristics of LiF:Mg,Ti. Radiat. Prot. Dosim. **131**: 406-413 (2008).

179. Horowitz, Y.S., Oster, L., Biderman S. and Einav, Y. Localised transitions in the thermoluminescence of LiF:Mg,Ti: potential for nanoscale dosimetry. J. Phys. D. **36**: 446-459 (2003).

180. Hu, B., Grabham, P., Nie, J., Balajee, A.S., Zhou, H., Hei, T.K. and Geard, C.R. Intrachromosomal changes and genomic instability in site-specific microbeam-irradiated and bystander human-hamster hybrid cell. Radiat. Res. 2011 Nov 11. [Epub ahead of print].

181. Hu, B., Shen, B., Su, Y., Geard, C.R., Balajee A.S. Protein kinase C epsilon is involved in ionizing radiation induced bystander response in human cells. Int J Biochem Cell Biol. **41**: 2413-2421 (2009) PMC2784166.

182. ICRU, An International Neutron Dosimetry Intercomparison, ICRU Report 27, International Commission on Radiation Units and Measurements, Washington, D.C., 1978.

183. Ivanov, V.N., Ghandhi, S.A., Zhou, H., Huang, S.X., Chai, Y., Amundson, S.A. and Hei, T.K. Radiation response and regulation of apoptosis induced by a combination of TRAIL and CHX in cells lacking mitochondrial DNA: a role for NFκB- and STAT3-directed gene expression. Exp. Cell Res. **317**: 1548-1566 (2011).

184. Ivanov, V.N., Zhou, H, Ghandhi, S.A., Karasic, T.B., Yaghoubian, B., Amundson, S.A. and Hei, T.K. Radiation-induced bystander signaling pathways in human fibroblasts: a role for interleukin-33 in the signal transmission. Cell. Signal. **22**: 1076-87 (2010) PMCID: PMC2967061.

185. Ivanov, V.N., Zhou, H., and Hei, T.K. Sequential treatment by ionizing radiation and sodium arsenite dramatically accelerates TRAIL-mediated apoptosis of human melanoma cells. Cancer Res. **67**: 5397-5407 (2007).

186. Jin, Y., Yie, T-A. and Carothers, A. Non-random deletions at the dihydrofolate reductase locus of Chinese hamster ovary cells induced by α-particles simulating radon. Carcinogenesis **16**: 1981-1991 (1995).

187. Jones, G.D.D., Milligan, J.R., Ward, J.F., Calabro-Jones, P.M. and Aguilera, J.A. Yield of strand breaks as a function of scavenger concentration and LET for SV40 irradiated with 4He ions. Radiat. Res. **136**: 190-196 (1993).

188. Katanic, J. Electron Spin Resonance Characterization of Human Tooth Enamel Response to Proton, Neutron, and Ultraviolet Radiation. . Ph.D thesis, Purdue University, August, 2003.

189. Kellerer, A.M. and Rossi, H.H. Dependence of RBE on neutron dose. Br. J. Radiol. **45**: 626 (1972).

190. Kellerer, A.M., Hall, E.J., Rossi, H.H. and Teedla, P. RBE as a function of neutron energy. II. Statistical analysis. Radiat. Res. **65:** 172-186 (1976).

191. Kellerer, A.M., Lam, Y-M.P. and Rossi, H.H. Biophysical studies with spatially correlated ions: 4. Analysis of cell survival data for diatomic deuterium. Radiat. Res. **83**: 511-528 (1980).

192. Kinnison, J.D., Maurer, R.H., Roth, D.R. and Haight, R.C. High energy neutron spectroscopy with thick silicon detectors. Radiat. Res. **159**:154-160 (2003).

193. Klemic, G.A., Azziz, N. and Marino, S.A. The neutron response of Al2O3:C, ^{7}LiF:Mg,Cu,P, and ^{7}LiF:Mg,Ti TLDs. Solid State Dosimetry, Part I, Proceedings of the 11th International Conference, Budapest. Radiat. Prot. Dosim.**65**(1-4): 221-226 (1996).

194. Kliauga, P. Measurement of single event energy deposition spectra at 5 nm to 250 nm simulated site sizes. In *Proceedings of the Tenth Symposium on Microdosimetry* (J. Booz, J.A. Dennis and H. Menzel, Eds.), Radiat. Prot. Dosim. **31**(1-4): 119-124, Nuclear Technology Publishing, Kent, England, 1990.

195. Kliauga, P. Techniques for measurement of energy deposition in nanometer volumes. In *Radiation Research: A Twentieth Century Perspective*, volume II: Congress Proceedings (W.C. Dewey, et al., Eds.), pp. 409-414, Academic Press, Inc., San Diego, 1992.

196. Kliauga, P. Nanodosimetry of heavy ions using a miniature cylindrical counter of wall-less design. In *Proceedings of the Eleventh Symposium on Microdosimetry* (H.G. Menzel, et al., Eds.), Radiat. Protect. Dosim. 52: 367-371 (1994).

197. Knappe, P. Calculation of LET and Dose Correction Factors for Radiobiological Charged Particle Experiments, Fachhochschule Aachen, Jülich, Germany, 1997 (Undergraduate Thesis).

198. Kovalchuk, O., Zemp, F., Filkowski, J., Altamirano, A., Dickey, J.S., Jenkins-Baker, G., Marino, S.A., Brenner, D.J., Bonner, W.M. and Sedelnikova, O.A. MicroRNAome changes in bystander three-dimensional human tissue models suggest priming of apoptotic pathways. Carcinogenesis 31: 1882-1888 (2010) PMCID: PMC2950932.

199. Le, B.Q., Maurer, R.H., Nhan, E. and Lew, A. Design, fabrication, and qualification of chip-on-board technology for space electronics. Int. J. Microcircuits Electronic Packaging, **22**: 104-114 (1999).

200. Lindborg, L., Kliauga, P., Marino, S.A. and Rossi, H.H. Variance-covariance measurements for determining the dose mean lineal energy in a neutron beam. In *Proceedings of the Ninth Symposium on Microdosimetry* (J.A. Dennis, J. Booz and B. Bauer, Eds.), Radiat. Prot. Dosim. **13**: 347-351 (1985).

201. Lindborg, L., Marino, S., Kliauga, P. and Rossi, H.H. Microdosimetric measurements and the variance-covariance method: Some experimental experience. Radiat. Environ. Biophys. **28**: 251-263 (1989).

202. Lindgren, A.L., Riley, E.F., Miller, R.C. and Ainsworth, J. Comparison of recovery from G_0/G_1 arrest in lens epithelial cells after X, neutron and ^{56}Fe irradiations. (Submitted 1997).

203. Littlefield, L.G. and Hoffman, G.R. Modulation of the clastogenic activity of ionizing radiation and bleomycin by the aminothiol WR-1065. Environ. Molec. Mutagen. **22**: 225-230 (1993).

204. Littlefield, L.G., Joiner, E.E., Colyer, S.P. and Frome, E.L. Radioprotective chemicals as tools for studying mechanisms of radiation-induced chromosome damage in human lymphocytes. In *Chromosome Alterations, Origin and Significance* (G. Obe and A.T. Natarajan, Eds.), pp 132-139, Springer-Verlag, Berlin, Germany, 1993.

205. Lo, Y.C. Characterization of a Neutron Detector Based on Superheated Drops. Ph.D. Thesis, Yale University, 1987.

206. Lo, Y.C. and Apfel, R. Prediction and experimental confirmation of the response function for neutron detection using superheated drops. Phys. Rev. A **38** (1988).

207. Loucas, B.D. and Geard, C.R. Kinetics of chromosome rejoining in normal human fibroblasts after exposure to low- and high-LET radiations. Radiat. Res. **138**, 352-360 (1994).

208. Loucas, B.D. and Geard, C.R. Initial damage in human interphase chromosomes from α-particles with LETs relevant to radon exposure. Radiat. Res. **139**: 9-14 (1994).

209. Lyulko, O.V., Randers-Pehrson, G.and Brenner, D.J. Immersion Mirau interferometry for label-free live cell imaging in an epi-illumination geometry. In Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues VIII, Daniel L. Farkas, Dan V. Nicolau and Robert C. Leif, eds. Proceedings of SPIE Vol. 7568, SPIE, Bellingham, WA, 2010.

210. Marino, S.A., Harvey, J.R., Brenner, D.J. and Rossi, H.H. Measurements of the distributions of separations between paired ions after passing through mylar foils. In *Proceedings of the Tenth Symposium on Microdosimetry* (J. Booz, J.A. Dennis and H. Menzel, Eds.), Radiat. Prot. Dosim. **31**(1-4): 77-80 (1990).

211. Marino, S.A. and Johnson, G.W. A microdosimetry chamber for low-energy x rays. Proceedings of the 13th Symposium on Microdosimetry, Stresa, Italy, May 26-June 1, 2001, Radiat. Prot. Dosim**. 99**: 377-378 (2002).

212. Martin, S.G., Miller, R.C., Geard, C.R. and Hall, E.J. The biological effectiveness of radon-progeny α-particles. IV. Morphological transformation of Syrian hamster embryo cells at low doses. Radiat. Res. **142**: 70-77 (1995).

213. Maurer, R.H., Kinnison, J.D., Roth, D.R. and Goldsten, J.O. Neutron spectroscopy on the international space station, AIAA Conference on International Space Station Utilization, Cape Canaveral, FL, 16 October, 2001. Proceedings published on CD ROM (AIAA paper 2001-5059).

214. Maurer, R.H., Roth, D. R., Fainchtein, R., Goldsten, J. O. and Kinnison, J. D. "Portable Real-Time Spectrometry II," Proceedings of the Space Technology and Applications International Forum 00, Conference on the International Space Station Utilization, Albuquerque, NM, 31 Jan-3Feb 2000, American Physical Society CD-ROM.

215. Maurer, R.H., Roth, D.R., Kinnison, J.D., Haggerty, D.K. and Goldsten, J.O. The NSBRI/APL Neutron Energy Spectrometer. Johns Hopkins APL Technical Digest **27**: 56-65 (2006).

216. Maurer, R.H., Roth, D.R., Kinnison, J.D., Goldsten, J.O., Gold, R.E. and Fainchtein, R. MArs Neutron Energy Spectrometer (MANES): an instrument for the Mars 2003 Lander. Acta Astronaut. **52**: 405-410 (2003).

217. Maurer, R.H., Zeitlin, C.J., Haggerty, D.K., Roth, D.R.and Goldsten, J.O. Compact Ion and Neutron Spectrometer (CINS) for Space Application. *2005 IEEE Nuclear Science Symposium Conference Record*, N14-48, pp 428-432, Puerto Rico, 23-29 October 2005.

218. McNulty, P.J., Wyatt, R.C., Farrell, G.E., Filz, R.C., and Rothwell, P.L. Proton upsets in LSI memories in space. In *Space Sysytems and Their Interactions with Earth's Space Environment* (H.B. Garrett and C.P. Pike, Eds.), Progress in Astronautics and Aeronautics, vol. 71, 1980.

219. Mezentsev, A., Ming, L., Amundson, S.A. Involvement of HNF4A in the low-dose radiation response of a human 3-dimensional tissue model. Radiat. Res. **175**: 677-688 (2011) PMCID: PMC3148653.

220. Miller, A.C., Stewart, M., Rivas, R., Marino, S., Randers-Pehrson, G., and Shi, L., Observation of radiation-specific damage in cells exposed to depleted uranium: hprt gene mutation frequency. Radiat. Meas. **42**: 1029-1032 (2007).

221. Miller, R.C. Neutron energy-dependent biological effects. Inst. Phys. Chem. Res. **83**: 36-39 (1989).

222. Miller, R.C., Brenner, D.J., Geard, C.R., Komatsu, K., Marino, S.A. and Hall, E. J. Oncogenic transformation by fractionated doses of neutrons. Radiat. Res. **114**: 589-598 (1988).

223. Miller, R.C., Brenner, D.J., Randers-Pehrson, G., Marino, S.A., and Hall, E.J. The effects of temporal distribution of dose on oncogenic transformation by neutrons and charged particles of intermediate LET. Radiat. Res. **124**, 562-568 (1990).

224. Miller, R.C., Geard, C.R., Brenner, D.J., Komatsu, K., Marino, S.A. and Hall, E.J. Neutron-energy-dependent oncogenic transformation of C3H 10T1/2 mouse cells. Radiat. Res. **117**: 114-127 (1989).

225. Miller, R.C., Geard, R.C., Brenner, D.J., Komatsu, K., Randers-Pehrson, G., Marino, S.A. and Hall, E.J. The effects of temporal distribution of dose on neutron-induced oncogenic transformation. In *Cell Transformation and Radiation-Induced Cancer* (K.H. Chadwick, C. Seymour, and B. Barnhart, Eds.), pp. 357-362, Adam Hilger, U.K., 1989.

226. Miller, R.C., Geard, C.R., Geard, M.J. and Hall, E.J. Cell-cycle-dependent radiation-induced oncogenic transformation in C3H 10T½ cells. Radiat. Res. **130**: 129-133 (1992).

227. Miller, R.C., Geard, C.R., Marino, S.A., Richards, M. and Randers-Pehrson, G. Oncogenic transformation following sequential irradiations with monoenergetic neutrons and X rays. Radiat. Res. **125**: 338-342 (1991).

228. Miller, R.C., Geard, C.R., Martin, S.G., Marino, S.A. and Hall, E.J. Neutron-induced cell cycle dependent oncogenic transformation of C3H 10T1/2 cells. Radiat. Res. **142**: 270-275 (1995).

229. Miller, R.C. and Hall, E.J. Cell-cycle dependent radiation-induced transformation of C3H 10T1/2 cells In *Low Dose Irradiation and Biological Defense Mechanisms* (T. Sugahara, L.A. Sagan and T. Aoyama, Eds.), pp. 347-350, Elsevier Science Pubs., Amsterdam, 1992.

230. Miller, R.C. and Hall, E.J. Oncogenic transformation of C3H 10T1/2 cells by acute and protracted exposures to monoenergetic neutrons. Radiat. Res. **128**: S60-S64 (1991).

231. Miller, R.C., Marino, S.A., Brenner, D.J., Martin, S.G., Richards, M., Randers-Pehrson, G. and Hall, E.J. The biological effectiveness of radon-progeny alpha particles. II. Oncogenic transformation as a function of LET. Radiat. Res. **142**: 54-60 (1995).

232. Miller, R.C., Marino, S.A., Martin, S.G., Komatsu, K., Geard, C.R., Brenner, D.J. and Hall, E.J. Neutron energy-dependent cell survival and oncogenic transformation. J. Radiat. Res. **40 Suppl.**: 53-59 (1999).

233. Miller, R.C., Marino, S.A., Napoli, J., Shah, H., Hall, E.J., Geard, C.R. and Brenner, D.J. Oncogenic transformation by low-energy neutrons. Int. J. Radiat. Biol. **76**: 327-334 (2000).

234. Miller, R.C., Martin, S.G., Geard, C.R., Marino. S.A., Randers-Pehrson, G., Brenner, D.J. and Hall, E.J. High LET-induced Oncogenic Transformation. In *Risk Evaluation of Cosmic-ray Exposure in Long-term Manned Space Mission* (F. Fujitaka, et. al., Eds.) pp. 121-126, Kondasha Scientific Ltd., Tokyo, Japan, 1999.

235. Miller, R.C., Martin, S.G., Hanson, W.R., Marino, S.A. and Hall, E.J. Effect of track structure and radioprotectors on the induction of oncogenic transformation in murine fibroblasts by heavy ions. Adv. Space Res. **22**: 1719-1723 (1998).

236. Miller, R.C., Randers-Pehrson, G., Geard, C.R. Hall, E.J. and Brenner, D.J. The oncogenic potential of a single alpha particle. Proc. Natl. Acad. Sci. USA **96**: 19-22 (1999).

237. Miller, R.C., Randers-Pehrson, G., Hieber, L., Marino, S.A., Kellerer, A. and Hall, E.J. Influence of dose protraction of intermediate and high LET radiation on oncogenic transformation. In *New Developments in Fundamental and Applied Radiobiology* (C.B Seymour and C. Mothersill, Eds.), pp. 177-182, Taylor and Francis, Ltd., 1991.

238. Miller, R.C., Randers-Pehrson, G., Hieber, L., Marino, S.A., Richards, M. and Hall, E.J. The inverse dose-rate effect for oncogenic transformation by charged particles is LET dependent. Radiat. Res. **133**: 360-364 (1993).

239. Miller, R.C., Richards, M., Brenner, D., Hall, E.J., Jostes, R., Hui, E. and Brooks, A. The biological effectiveness of radon-progeny alpha particles. V. A. The biological effectiveness of radon-progeny alpha particles. V. Comparison of oncogenic transformation by accelerator-produced monoenergetic alpha particles and by polyenergetic alpha particles from radon progeny. Radiat. Res. **146**: 75-80 (1996).

240. Miller, R.C., Sawant, S.G., Randers-Pehrson, G., Marino, S.A., Geard, C.R., Hall E.J. and Brenner, D.J. Single alpha-particle traversals and tumor promoters. Radiat. Res. **153**: 227 (2000).

241. Milligan, J.R., Aguilera, J.A., Wu, C C.L., Ng, J. Y.-Y. and Ward, J.F. The difference that LET makes to precursors of DNA strand breaks. Radiat. Res. **145**: 442-448 (1996).

242. Milligan, J.R., Aguilera, J.A., Paglinawan, R.A., Ward, J.F. and Limoli. C.L. DNA strand break yields after post-high LET irradiation incubation with endonuclease-III and evidence for hydroxyl radical clustering. Int. J. Radiat. Biol. **77**: 155-164 (2001).

243. Mills, R. and Rossi, H.H. Mean energy deposition distribution about proton tracks. Radiat. Res. **84**: 434-443 (1980).

244. Mitchell, S.A. Marino, S.A., Brenner, D.J. and Hall, E. J. The bystander effect and adaptive response in C3H 10T½ cells. Int. J. Radiat. Biol. **80**: 465-472 (2004).

245. Mitchell, S.A., Randers-Pehrson, G., Brenner, D.J. and Hall, E. J. The bystander response in C3H 10T½ cells: the influence of cell-to-cell contact. Radiat. Res. **161**: 397-401 (2004).

246. Morgan, W.F., Hartmann, A., Limoli, C.L., Nagar and Ponnaiya, B. Bystander effects in radiation-induced genomic instability. Mutat. Res. **504**: 91-100 (2002).

247. Musolino, S.V., McGinley, P.H., Greenwood, R.C., Kliauga, P. and Fairchild, R.G. Evolution of an iron-filtered epithermal neutron beam for neutron-capture therapy. Med. Phys. **18**: 806 (1991).

248. Nikolaev, A., Oks, E.M., Savkin K., Yushkov, G.Yu., Brenner, D.J. Johnson, G., Randers-Pehrson, G., Brown, I.G. and MacGill, R.A. Surface resistivity tailoring of ceramic insulators for an ion microprobe application. Surface & Coatings Technology **201**: 8120–8122 (2007).

249. Obelic, B., Srdoc, D., Djuric, P.M. and Marino, S.A. The frequency distribution of the number of ion pairs in irradiated tissue. Radiat. Res. **149**: 411-415 (1998).

250. Pandita, T.K. and Geard, C.R. Chromosome aberrations in human fibroblasts induced by monoenergetic neutrons. I. Relative biological effectiveness. Radiat. Res. **145**: 730-739 (1996).

251. Pandita, T.K., Hall, E.J., Hei, T.K., Piatysezek, M.A., Wright, W.E., Piao, C.Q., Pandita, R.K., Willey, J.C., Geard, R.C., Kastan, M.B. and Shay, J.W. Chromosome end-to-end associations and telemorase activity during cancer progression in human cells after treatment with α-particles simulating radon progeny. Oncogene **13**: 1423-1430 (1996).

252. Piao, C.Q. and Hei, T.K. Radiation, cigarette smoke and oncogenic transformation. Carcinogenesis **14**: 497-501 (1993).

253. Piao, C.Q. and Hei, T.K. Gene amplification and microsatellite instability in tumorigenic conversion of human bronchial epithelial cells by alpha particles and heavy ions. Radiat. Res. **155:** 263-267 (2001).

254. Piao, C.Q., Willey, J.C. and Hei, T.K. Alterations of p53 in tumorigenic human bronchial epithelial cells correlate with metastatic potential. Carcinogenesis **20**: 1529-1533 (1999).

255. Ponnaiya, B., Cornforth, M.N., and Ullrich, R.L. Induction of chromosome instability in human cells by neutrons and gamma rays. Radiat. Res. **147**: 288-294 (1997).

256. Ponnaiya, B., Jenkins-Baker, G., Bigelow, A., Marino, S. and Geard, C.R. Detection of chromosomal instability in α-irradiated and bystander human fibroblasts. Mutat. Res. **568**: 41-48 (2004)

257. Ponnaiya, G., Jenkins-Baker, G., Brenner, D.J., Hall, E.J., Randers-Pherson, G. and Geard, C.R. Biological responses in known bystander cells, relative to known microbeam irradiated cells. Radiat. Res. **162**: 426-432 (2004).

258. Ponnaiya, B., Jenkins-Baker, G., Randers-Pehrson, G. and Geard, C.R. Quantifying a bystander response following microbeam irradiation using single cell RT-PCR analyses. Exp. Hematol. **35 (Suppl. 1)**: 64-68 (2007).

259. Ponomarev, A.L., Brenner, D.J., Hlatky, L.R. and Sachs, R.K. DNA Fragment-size distributions for large sizes after high let radiation, derived from a polymer, random walk chromatin model. Rad. Environ. Biophys. **39**: 111-120 (2000).

260. Ponomarev, A.L., Cucinotta, F.A., Sachs, R.K., Brenner, D.J. and Peterson, L.E. Extrapolation of the DNA fragment-size distributions in a high-dose PFGE assay to low doses. Radiat. Res. **156**: 594-597 (2001).

261. Randers-Pehrson, G. Microbeams, Microdosimetry and Specific Dose. 13th Symposium on Microdosimetry, Stresa, Italy,May 27-June 1, 2001. Radiat. Prot. Dosim. **99**: 271-272 (2002).

262. Randers-Pehrson, G. and Brenner, D.J. A practical target system for accelerator-based BNCT which may effectively double the dose rate. Med. Phys. **28**: 894-896 (1998).

263. Randers-Pehrson, G., Geard, G.R., Johnson, G.W. and Brenner, D.J. Technical characteristics of the Columbia University single-ion microbeam. Radiat. Res. **153**: 221-223 (2000).

264. Randers-Pehrson, G., Geard, C.R., Johnson, G. W. and Brenner, D.J. The Columbia University single-ion microbeam. Radiat. Res. **156**: 210-214 (2001).

265. Randers-Pehrson, G., Johnson, G.W., Marino, S.A., Xu, Y., Dymnikov, A.D. and Brenner, D.J The Columbia University sub-micron charged particle beam. Nucl. Instr. Meth. A (2009) **609**: 294-299 (2009) PMCID: PMC2778032.

266. Rini, F.J. Neutrons and the Oxygen Effect, Ph.D. Thesis, Columbia University, 1978.

267. Rini, F.J., Hall, E.J. and Marino, S. The OER as a function of neutron energy with mammalian cells in culture. Radiat. Res. **78**: 25-37 (1979).

268. Rithidech, K., Bond, V.P., Cronkite, E.P., Thompson, M.H. and Bullis, J.E. Characterization of radiation-induced murine myelogenous lukemia. Environ. Mol. Mutagen. **17** Suppl. 19: 61 (1991).

269. Rithidech, K., Bond, V.P., Cronkite, E.P., Thompson, M.H. and Bullis, J.E. Hypermutability of mouse chromosome 2 during the development of x-ray-induced murine myeloid lukemia. Proc. Natl. Acad. Sci. USA **92**(4): 1152-1156 (1995).

270. Rithidech, K., Bond, V.P., Cronkite, E.P. and Thompson, M.H. A specific chromosomal deletion in murine lukemic cells induced by radiation with different qualities. Exp. Hematol. **21**: 427-431 (1993).

271. Rithidech, K., Bond, V.P., Cronkite, E.P. and Whorton, E.B. Evidence for clonal expansion of abnormal mouse chromosome 2 during the development of radiation-induced myeloid lukemia. Environ. Mol. Mutagen. **19** Suppl. 20: 53 (1992).

272. Rithidech, K., Dunn, J.J., Bond, V.P., Cronkite, E.P. and Gordon, C.G. Detection of N-ras gene mutations in radiation-induced murine myeloid lukemia by the PCR-single strand based technique. Eviron. Mol. Mutagen. **23** Suppl. 23: 57 (1994).

273. Rithidech, K., Tice, R.R and Bond, V.P. Induction of micronuclei in human lymphocytes after in vitro exposure to low doses of neutrons. Environ. Mol. Mutagen. **15** Suppl. 17: 50 (1990).

274. Rodgers, R.C. and Gross, W. Microdosimetry of monoenergetic neutrons. In *Proceedings of the Fourth Symposium on Microdosimetry*, Euratom 1027-1042, 1974.

275. Rohrig, N. and Colvett, R.D. Measurements of W in methane tissue-equivalent gas for protons. In *Basic Physical Data for Neutron Dosimetry* (J.J. Broerse, Ed.), EUR 5629e, pp. 99-105,1976.

276. Rohrig, N. and Colvett, R.D. Measurements of W for protons, helium-4 ions and carbon ions in tissue-equivalent gas. Radiat. Res. **76**: 225-240 (1978).

277. Rohrig, N., Bird, R.P., Colvett, R.D., Rossi, H.H. and Marino, S.A. Unique biophysical studies with diatomic deuterium beams. In *Proceedings of the Fifth Conference on Application of Small Accelerators*, IEEE Transactions on Nucl. Sci., **NS-26**: 1763-1765 (1979).

278. Ross, G.J., Bigelow, A.W., Randers-Pehrson, G., Peng, C.C. and Brenner, D.J. Phase-based cell imaging techniques for microbeam irradiations. Nucl. Instr. & Meth. B **241**: 387-391 (2005).

279. Ross, G.J., Garty, G., Randers-Pehrson, G., and Brenner, D.J. A single-particle/single-cell microbeam based on an isotopic alpha source. Nucl. Instrum. Meth. B **231**: 207-211 (2005).

280. Rossi, H.H. Cell irradiations with molecular ions. Bull. Am. Phys. Soc. **23**: 222 (1978).

281. Rossi, H.H. Biophysical studies with spatially correlated ions: 1. Background and theoretical considerations. Radiat. Res. **78**: 185-191 (1979).

282. Rossi, H.H. The molecular ion experiment. Nucl. Inst. Meth. **170**: 57-59 (1980).

283. Rossi, H.H., Alsmiller, R.G., Berger, M.J., Kellerer, A.M., Roesch, W.C., Spencer, L.A. and Zaider, M. Conceptual basis for calculations of absorbed-dose distributions. NCRP Report 108 (1991).

284. Rossi, H.H., Bird, R., Colvett, R.D., Kellerer, A.M., Rohrig , N. and Lam, Y-M.P. The molecular ion experiment. In *Proceedings of the Sixth Symposium on Microdosimetry* (J. Booz and H. Ebert, Eds.), Vol. 2, pp. 937-947, Harwood Academic Publishers, Ltd, London, 1978.

285. Rossi, H.H. and Zaider, M. Neutron RBE for A-Bomb survivors. RERF Update **3**: 3-4 (1991).

286. Rossi, H.H. and Zaider, M. Elements of microdosimetry. Med. Phys. **18**: 1085 (1991).

287. Rossi, H.H. and Zaider, M. Compound dual radiation action. Radiat. Res. **132**: 178-183 (1992).

288. Roy, D., Calaf, G.M., Hande, M.P. and Hei, T,K. Allelic imbalance at 11q23-q24 chromosome associated with estrogen and radiation-induced breast cancer progression. Int. J. Oncol. **28**: 667-674 (2006).

289. Roy, D., Calaf, G. and Hei, T.K. Profiling of differentially expressed genes induced by high LET radiation in breast epithelial cells. Mol. Carcin. **31**: 192-203 (2001).

290. Roy D., Calaf G. and Hei T.K. Frequent allelic imbalance on chromosome 6 and 17 correlate with radiation-induced neoplastic transformation of human breast epithelial cells. Carcin. **22**: 1685-1692 (2001).

291. Sachs, R.K. and Brenner, D.J. Solid tumor risks after high doses of ionizing radiation. Proc. Nat. Acad, Sci. USA **102**: 13040-5 (2005).

292. Sawant, S.G., Randers-Pehrson, G., Geard, C.R., Brenner, D.J. and Hall, E.J. The bystander effect in radiation oncogenesis: I. Transformation in C3H10T½ cells *in vitro* can be initiated in the unirradiated neighbors of irradiated cells. Radiat. Res. **155**: 397-401 (2001).

293. Sawant, S.G., Randers-Pehrson, G., Geard, C.R., Brenner, D.J. and Hall, E.J. The bystander effect in radiation oncogenesis. Mutation Res. (Submitted, 2001)

294. Sawant, S.G., Randers-Pehrson, G., Metting, N.F. and Hall, E.J. Adaptive response and the bystander effect induced by radiation in C3H 10T1/2 cells in culture. Radiat. Res. **156**: 177-180 (2001).

295. Sawant, S.G., Randers-Pehrson, G., Metting, N. and Hall, E.J. Can adaptive response alter the bystander effect in C3H 10T1/2 cells? 13th Microdosimetry Symposium, Stresa, Italy, May 26-June 1, 2001. To be published in Radiat. Prot. Dosim.

296. Sawant, S.G., Zheng, W., Hopkins, K.M., Randers-Pehrson, G. Lieberman, H.B. and Hall, E.J. The radiation-induced bystander effect for clonogenic survival. Radiat. Res. **157**: 361-364 (2002).

297. Schettino, G.; Johnson, G.W.; Marino, S.A. and Brenner, D. J. Development of a method for assessing non-targeted radiation damage in an artificial 3D human skin model. Int. J. Radiat. Bio. **86**: 593-601 (2010) PMCID: PMC3228351.

298. Sedelnikova, O.A., Nakamura, A., Kovalchuk, O., Koturbash, I., Mitchell, S.A., Marino, S.A., Brenner, D.J. and Bonner, W.M. DNA double-strand breaks form in bystander cells after microbeam irradiation of three-dimensional human tissue models. Cancer Res. **67**: 4295-4302 (2007).

299. Shellabarger, C.J. Modifying factors in rat mammary gland carcinogenesis. In *Biology of Radiation Carcinogenesis* (J. Yuhas, R.W. Tennant and J.R. Regan, Eds.), pp. 31-43, Raven Press, New York, 1976.

300. Shellabarger, C.J., Brown, R.D., Rao, A.R., Shanley, J.P., Bond, V.P., Kellerer, A.M., Rossi, H.H., Goodman, L.J. and Mills, R.E. Rat mammary carcinogenesis following neutron or x-radiation. In *Biological Effects of Neutron Irradiation*, pp. 391-401, IAEA, Vienna, 1974.

301. Shellabarger, C., Chmlevsky, D. and Kellerer, A.M. Induction of mammary neoplasms in the Sprague-Dawley rat by 430-keV neutrons and X-rays. JCNI **64**: 821-833 (1980).

302. Shellabarger, C., Chmlevsky, D. Kellerer, A.M., Stone, P. and Holtzman, S. Induction of mammary neoplasms in the ACI rat by 430-keV neutrons, X-rays, and diethylstilbesterol. JCNI **69**: 1135-1146 (1982).

303. Shellabarger, C.J., Stone, J.P. and Holtzman, S. Synergism between neutron radiation and diethylstilbestrol in the production of mammary adenocarcinoma in the rat. Cancer Res. **36**: 1019-1022 (1976).

304. Shellabarger, C.J., Stone, J.P. and Holtzman, S. Rat differences in mammary tumor induction with estrogen and neutron irradiation. J. Natl. Cancer Inst. **61**: 1505-1508 (1978).

305. Shuryak, I., Sachs, R.K. and Brenner, D.J. Biophysical models of radiation bystander effects: 1. Spatial effects in three-dimensional tissues. Radiat Res. **168**:741-9 (2007).

306. Sidik, K., Lieberman, H.B. and Freyer, G.A. Repair of DNA Damaged by UV and Ionizing Radiation by Cell-Free Extracts prepared from schizosaccharomyces pombe. Proc. Natl. Acad. Sci. USA **89**: 12112-12116 (1992).

307. Sloan, S. Activation of the ras Oncogene in Murine Thymic Lymphomas Induced by Neutron Radiation and N-nitroso-N-methylurea. Ph.D. Thesis, New York University, 1989.

308. Sloan, S.R., Newcomb, E.W. and Pellicer, A. Neutron radiation can activate K-ras via a point mutation in codon 146 and induces a different spectrum of ras mutations than does gamma radiation. Mol. Cell. Biol. **10**: 405-408 (1990).

309. Sloan, S.R. and Pellicer, A. ras Oncogene activation in gamma - and neutron - radiation induced murine thymic lymphomas. In *Radiation Research: A Twentieth Century Perspective*, volume II: Congress Proceedings (W.C. Dewey, et al., Eds.), pp. 353-357, Academic Press, Inc., San Diego, 1992.

310. Sloan, S.R. and Pellicer, A. Activation of the *ras* oncogene in gamma irradiation and neutron irradiation induced thymic lymphomas. In *Relevance of Animal Studies to the Evaluation of Human Cancer Risk*, pp. 1-8, Wiley-Liss, Inc., 1992.

311. Smilenov, L.B., Hall, E.J., Bonner, W.M. and Sedelnikova, O.A. A microbeam study of DNA double-strand breaks in bystander cells. Radiat. Prot. Dosim **122**: 265-269 (2006).

312. Sokolov, M.V., Smilenov, L.B., Hall, E.J., Panyutin, I.G., Bonner, W.M. and Sedelnikova O.A. Ionizing radiation induces DNA double-strand breaks in bystander primary human fibroblasts. Oncogene **24**: 7257-7265 (2005).

313. Solomon, H.M., Beckman, D.A., Buck, S.J., Gorson, R.O., Mills, R.E. and Brent, R.L. Comparative effects of neutron irradiation and X irradiation on the embryonic development of the rat. Radiat. Res. **137**: 226-230 (1994).

314. Sparrow, A.H., Underbrink, A.G. and Rossi, H.H. Mutations induced in *Tradescantia* by small doses of x rays and neutrons: Analysis of dose-response curves. Science **176**: 916-918 (1972).

315. Spector, G.B, McCollum, T. and Spowart, A.R. Scintillator fiber optic long counter response to neutrons from 0.5 - 15.1 MeV. Nucl. Inst. Meth. Phys. Res. A **346**: 273-278 (1994).

316. Srdoc, D., Goodman, L.J., Marino, S.A., Mills, R.E., Zaider, M., and Rossi, H.H. Microdosimetry of Monoenergetic Neutron Radiation. In *Proceedings of the Seventh Symposium on Microdosimetry* (J. Booz, H. Ebert, and H. Hartfiel, Eds.), p. 765, EUR 7147 DE-EN-FR, 1981.e

317. Srdoc, D. and Marino, S.A. Microdosimetry of monoenergetic neutrons. Radiat. Res. **146**: 466-474 (1996).

318. Straume, T. Biological Effectiveness of Neutron Irradiation on Animals and Man, Ph.D. Thesis, University of California Davis/Livermore, 1982.

319. Straume, T. and Dobson, R.L Mouse oocyte killing by neutrons: target considerations. In *Proceedings of the Ninth Symposium on Microdosimetry* (J.A. Dennis, J. Booz and B. Bauer, Eds.), Radiat. Prot. Dosim. **13**(1-4): 175-176, Nuclear Technology Publishing, Kent, England, 1985.

320. Straume, T., Dobson, R.L., and Kwan, T.C. Neutron RBEs and the radiosensitive target for mouse immature oocyte killing. Radiat. Res. **111**: 47-57 (1987).

321. Straume, T., Kwan, T.C., Goldstein, L. and Dobson, R. Radiolethal and genetic vulnerabilities of germ cells in the female mammal: Effects of tritium and other radiations compared. In *Proceedings of the Third Japan-U.S. Workshop on Tritium Radiobiology in Health Physics* (S. okada, Ed.), pp. 264-273, 1989.

322. Straume, T., Kwan, T.C., Goldstein, L.S. and Dobson, R.L. Measurement of neutron-induced genetic damage in mouse immature oocytes. Mutat. Res. **248**: 122-133 (1991).

323. Suzuki; M. He-ion microbeam induces a bystander effect via cell to cell junction. Radioisotopes **55**: 341-349 (2006).

324. Suzuki, M., Zhou, H., Geard, C.R. and Hei, T.K. Effect of medium on chromatin damage in bystander mammalian cells. Radiat. Res. **162**: 264-269 (2004).

325. Suzuki, M., Zhou, H., Hei, T.K., Tsuruoka, C. and Fujitaka, K. Induction of a bystander chromosomal damage of He-ion microbeams in mammalian cells. Biol. Sci. Space. **17**: 251-252 (2003).

326. Sykora, G.J. and Akselrod, M.S., Salasky, M. and Marino, S.A. Novel Al_2O_3:C,Mg Fluorescent Nuclear Track Detectors for Passive Neutron Dosimetry. Radiat. Prot. Dosim NEUDOS10 Special Edition: 1-6 (2007).

327. Underbrink, A.G., Kellerer, A.M., Mills, R.E. and Sparrow, A.H. Comparison of x ray and gamma-ray dose-response curves for RBE determinations at high and low doses in *Tradescantia* clone 02. Radiat. and Environ. Biophysics **13**: 295 (1976).

328. Underbrink, A.G. and Sparrow, A.H. Power relations as an expression of relative biological effectiveness in *Tradescantia* stamen hairs. Radiat. Res. **46**: 580-587 (1971).

329. Underbrink, A.G. and Sparrow, A.H. The influence of experimental endpoints, dose, dose rate, neutron energy, nitrogen ions, hypoxia, chromosome volume and ploidy level in *Tradescantia* stamen hairs and pollen. In *Proceedings of the Symposium on the Effects of Neutron Irradiation upon Cell Function*, IAEA, Vienna, 1974.

330. Underbrink, A.G., Sparrow, A.H., Sautkulis, D. and Mills, R.E. Oxygen enhancement ratios (OERs) for somatic mutations in *Tradescantia* stamen hairs. Radiat. Botany **15**: 161-168 (1975).

331. Underbrink, A.G., Sparrow, A.H., Sautkulis, D. and Mills, R.E. An elusive factor affecting mutation frequency in *Tradescantia* stamen hairs: its influence on r.b.e. Int. J. Radiat. Biol. **28**: 527-538 (1975).

332. Underbrink, A.G., Sparrow, R.C., Sparrow, A.H. and Rossi, H.H. Relative biological effectiveness of x-rays and 0.43 MeV monoenergetic neutrons on somatic mutations and loss of reproductive integrity in *Tradescantia* stamen hairs. Radiat. Res. **44**: 187-203 (1970).

333. Underbrink, A.G., Sparrow, R.C., Sparrow, A.H. and Rossi, H.H. Relative biological effectiveness of 0.43-MeV and lower energy neutrons on somatic aberrations and hair-length in *Tradescantia* stamen hairs. Int. J. Radiat. Biol. **19**: 215-228 (1971).

334. Wallace, R.E. Microdosimetry of Fast Neutrons in Selected Biological Materials. Ph.D. Thesis, University of Pennsylvania, 1987.

335. Wallace, R. and Bloch, P. Microdosimetry of 14 MeV neutrons in tissues of different compositions. In *Proceedings of the 13th Northeast Bioengineering Conference*, IEEE Society for Medicine and Biology, IEEE Press, 1987.

336. Weaver, D.A., Hei, T.K., Hukku, B., McRaven, J.A.M. and Willey, J.A. Cytogenic and molecular genetic analysis of tumorigenic bronchial epithelial cells induced by radon alpha particles. Carcinogenesis **18:** 1251-1258 (1997).

337. Willey, J.C., Hei, T.K., Piao, C.Q., Apostoiakos, M.J. and Hukku, B. Radiation induced deletion of chromosomal regions containing tumor suppressor genes in human bronchial epithelial cells. Carcinogenesis **14**: 1181-1188 (1993).

338. Williams, E.S., Stap, J. Essers, J., Ponnaiya, B., Luijsterburg, M.S., Krawczyk, P.M., Ullrich, R.L., Aten, J.A. and Bailey, S.M. DNA double strand breaks are not sufficient to initiate the recruitment of TRF2. Nat. Genet. **39**: 696-698 (2007).

339. Worgul, B.V., Medvedovsky, C., Huang, Y., Marino, S.A., Randers-Pehrson, G. and Brenner, D.J. Quantitative assessment of the cataractogenic potential of very low doses of neutrons. Radiat. Res. **145**: 343-349 (1996).

340. Wu, L. J., Randers-Pehrson, G., Waldren, C. A., Geard, C. R., Yu, Y. Z. and Hei, T. K. Biological consequence of cytoplasmic irradiation: role of reactive oxygen species. Proc. Natl. Acad. Sci. USA **96**: 4959-4964 (1999).

341. Xu, D.B., Feng, H., Hei, T.K., Piao, C.Q. and Kahn, S. Absence of microsattelite muatator phenotype in human bronchial epithelial cells transformed by alpha particles. Int. J. Oncol. **10**: 921-925 (1997).

342. Xu, Y., Randers-Pehrson, G., Marino, S.A., Bigelow, A.W., Akselrod, M.S., Sykora, J.G. and Brenner, D.J. An accelerator-based neutron microbeam system for studies of radiation effects. Radiat. Prot. Dosimetry. **145**:373-376 (2011) PMCID: PMC3145382.

343. Zaider, M., Bird, R.P., Rossi, H.H., Marino, S. and Rohrig, N. A study of cell survival in mammalian celss exposed to spatially correlated triads of protons. Radiat. Environ. Biophys. **22**: 239-249 (1983).

344. Zeitlin, C.J., Maurer, R.H., Roth, D.R., Goldsten, J. O. and Grey, M. P. Development and evaluation of the combined ion and neutron spectrometer (CINS). Nucl. Inst. Methods B **267**: 139-143 (2009).

345. Zhao, Y.L., Piao, C Q., Hall, E.J., and Hei, T.K., Mechanism of radiation induced transformation of human bronchial epithelial cells. Radiat. Res. **155**: 230-234 (2001).

346. Zhou, H, Hong, M., Chai, Y., and Hei, T.K., Consequences of cytoplasmic irradiation: Studies from microbeam. J. Radiological Sciences **50** Suppl A: A59-65, 2009.

347. Zhou, H., Ivanov, V. N., Gillespie, J., Geard, C. R., Amundson, S. A., Brenner, D. J., Yu, Z., Lieberman, H. B. and Hei, T. K. Mechanism of radiation-induced bystander effect: Role of the cyclooxygenase-2 signaling pathway. PNAS **102**: 14641-14646 (2005).

348. Zhou, H., Ivanov, V.N., Lien, Y.C., Davidson, M. and Hei, T.K. Mitochondrial function and NF-κB mediated signaling in radiation-induced bystander effects. Cancer Res. **68**: 2233- 2240 (2008).

349. Zhou, H, Randers-Pehrson, G., Geard, C.R., Brenner, D.J., Hall, E.J. and Hei, T.K, Interaction between radiation-induced adaptive response and bystander mutagenesis in mammalian cells. Radiat. Res. **160**: 512-516 (2003).

350. Zhou, H., Randers-Pehrson, G. and Hei, T.K. Studies of bystander mutagenic response using charged particle microbeam. Radiat. Res. **153**: 236-237 (2000).

351. Zhou, H., Randers-Pehrson, G., Suzuki, M., Waldren, C.A. and Hei, T.K. Genotoxic damage in non-irradiated cells: contribution from bystander effect. 13th Symposium on Microdosimetry, Stresa, Italy, May 26-June 1, 2001. Radiat. Prot. Dosim. **99**: 227-232 (2002).

352. Zhou HN, Randers-Pehrson G, Waldren C and Hei TK. Radiation induced bystander effect and adaptive response: implication for low dose radiation risk assessment. Adv. Space Res. **34**: 1368-1372 (2004).

353. Zhou, H., Randers-Pehrson, G., Waldren, C.A., Trosko, J.E., Hall, E.J. and Hei, T.K. Bystander mutagenesis induced by single alpha particle is mediated by cell-cell communication. 5th International Workshop on Microbeam Probes of Cellular Radiation Response, Stresa, Italy, May 26-27, 2001. Radiat. Prot. Dosim. **99**: (2002).

354. Zhou, H.N., Randers-Pehrson, G., Waldren, C., Vannais, D., Hall, E.J. and Hei, T.K. Induction of a bystander mutagenic effect of alpha particles in mammalian cells. Proc. Natl. Acad. Sci. USA **97**: 2099-2104 (2000).

355. Zhou, H.N., Suzuki, M., Geard, C.R., and Hei, T.K. Medium effect on bystander mutagenesis in mammalian cells. Mutat. Res. **499**: 135-141 (2002).

356. Zhou, H., Suzuki, M., Persaud, R., Gillispie, J., Randers-Pehrson, G. and Hei, T.K. Contribution of bystander effects in radiation induced genotoxicity. Acta Medica Nagasakiensia **50**: 73-77 (2005).

357. Zhou, H., Suzuki, M, Randers-Pehrson, G., Vannais, D., Chen, G., Trosko, J.E., Waldren, C.A. and Hei, T.K. Radiation risk to low fluences of alpha particles maybe greater than what we thought. Proc. Nat. Acad. Sci., USA. **98**: 14410-14415 (2001).

358. Zhou, H., Xu, A., Suzuki, M, Randers-Pehrson G., Waldren, C.A. and Hei, T.K. The yin and yan of bystander versus adaptive response: lessons from the microbeam studies. International Congress Series **1236**: 241-247 (2002).

359. Zhou, H.N., Zhu, L.X., Li, K.B. and Hei, T.K. Radon, tobacco specific nitrosamine and mutagenicity. Mutat. Res. **430**: 145-153 (1999).

360. Zhu, A., Zhou, H., Leloup, C., Marino, S.A., Geard, C.R., Hei, T.K. and Lieberman, H.B. Differential impact of mouse *Rad9* deletion on ionizing radiation-induced bystander effects and LET-dependent radiosensitivity. Radiat. Res. **164** 665-661 (2005).

361. Zhu, L.X., Waldren, C.A., Vannais, D. and Hei, T.K. Cellular and molecular analysis of mutagenesis induced by charged particles of defined LET. Radiat. Res. **145**: 251-259 (1996).