

Columbia University in the City of New York | New York, N.Y. 10027

ENVIRONMENTAL HEALTH AND SAFETY

744 S.W. MURKIN  
500 West 120th Street

August 21, 1992

070-03074  
SNM-1995

Ms. Sherri Arredondo  
US Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Dear Ms. Arredondo:

This is to inform you that effective August 31, 1992, Dr. Leon Lidofsky will no longer Chair the Radiation Safety Committee. His successor will be Dr. David Brenner. His curriculum vitae is enclosed for your review.

We are, therefore, requesting the appropriate amendment to our license be made.

If you have any questions regarding this matter, please feel free to contact me at 212 854-8749.

Sincerely,

*Neil Wotherspoon*

Neil Wotherspoon  
Radiation Safety Officer

RECEIVED BY LFDCB	
Date	10/26/92
Log	Oct 21
By	B. Brenner
Date Completed	10/26/92

encl.

cc: L. Greenholtz  
P. Carter

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Curriculum Vitae

DAVID JONATHAN BRENNER

Date of Birth: [REDACTED]  
Place of Birth: [REDACTED]  
Nationality: [REDACTED]  
Status: [REDACTED]

*Exemp:*  
(b) (6)

Education: 1963-1970 Merchant Taylors' School  
Crosby, Liverpool, England.

Examinations passed:

GCE A-levels: Mathematics (grade A), Physics(A)  
Chemistry (A), General Studies (A)

GCE S-level: Physics (distinction)

1971-1974 Oxford University, St. Edmund Hall  
reading Physics and Philosophy

Awarded Carter Physics Prize, 1974.

Degrees obtained: B.A., M.A. (II-1)

1975-1976 Medical College of St. Bartholomews Hospital,  
University of London.

Degree obtained: M.Sc. in Radiation Physics  
(Distinction)

1976-1979 University of Surrey, Physics Department  
Degree obtained: Ph.D  
Thesis Topic: Pion Interactions with Light Nuclei  
and Applications to Radiotherapy.

## APPOINTMENTS

- 1992- Associate Professor, Department of Radiation Oncology,  
College of Physicians & Surgeons, Columbia University
- 1986-92 Assistant Professor, Department of Radiation Oncology,  
College of Physicians & Surgeons, Columbia University
- 1983-86 Associate Research Scientist, Radiological Research Laboratory,  
College of Physicians & Surgeons, Columbia University
- 1981-83 Staff Member, Los Alamos National Laboratory
- 1979-81 Postdoctoral Fellow, Los Alamos Scientific Laboratory.

## AWARDS

- Winner, 1992, NCRP Moseley Prize.
- Winner, 1991 Radiation Research Society Annual Research Award
- P.I. of American Cancer Society Research Grant "On the Problem of High vs Low Dose Rate for Cervical Carcinoma", 1991-1994.
- P.I. of NIH grant "Radon, Bronchial Morphometry and Occupational Health", 1991-1993.
- P.I. of NCI New Investigator Research Grant 1985-1989:  
"Early Effects of Radiation-Induced Radicals"
- Oxford University Carter Physics Prize, 1974.

## MEMBERSHIPS and COMMITTEES

- Associate Editor, International Journal of Radiation Biology.
- Consultant, ICRP/ICRU Committee on the Quality Factor, 1984-
- Member, IAEA Advisory Group on Nuclear and Atomic Data for Radiotherapy and Radiobiology (1985)
- Consultant, Los Alamos National Laboratory, 1987-
- Member, NCI Site Review Committees, University of Rochester, 1983, University of Wisconsin, 1990; Memorial Sloan-Kettering, 1991.
- Member, Radiation Research Society Membership Committee, Awards Committee
- Member of Program Committees for 34th and 36th Annual Meetings of Radiation Research Society, 1986, 1988.
- Member of Program Committee for 9th International Congress of Radiation Research, Toronto, 1991.
- Member of Program Committee for World Space Congress, 1992.

## COLUMBIA UNIVERSITY ACTIVITIES

### Teaching

Teacher of undergraduate course C1450 Radiation and Life -- Columbia University Biology Department, 24 lectures, annually. (jointly with H. Lieberman).

Teacher of graduate course P9321, Current Perspectives on the biological Effects of Radiation -- Columbia University School of Public Health, 24 hours, annually (jointly with M. Zaider).

Lecturer in Radiobiology for Residents in Radiation Oncology (Columbia-Presbyterian Medical Center).

Lecturer in core graduate course P6300 Environmental Sciences -- Columbia University School of Public Health.

Lecturer in graduate course P8308 Molecular Toxicology -- Columbia University School of Public Health.

Lecturer in graduate course P8312 Systemic Toxicology -- Columbia University School of Public Health.

Academic advisor to A. Ong, doctoral student in the School of Public Health.

### Other teaching

Course Faculty for Annual UCSF (University of California, San Francisco) Radiation Oncology Course: Approaches to Radiation Oncology, Biology and Physics.

Teacher of Radiation Biology for Residents in Radiation Oncology (St. Barnabas Hospital, New Jersey)

Teacher of course Scattering Theory, Surrey University, 1978-1979

### Columbia University Committees

Member, Columbia University Senate, 1985-1987.

Member, Senate Libraries and Computing Committee, 1985-1987.

Member, Columbia University Comprehensive Cancer Center Computer Committee.

Co-Chair, Howard Hughes Medical Institute Computing Advisory Committee.

## Selected Invited Conference Talks

Workshop on the Interface Between Radiation Chemistry and Radiation Physics (Argonne, 1982)  
"Analysis Techniques and Results of Monte-Carlo Simulation of Proton and Electron Tracks"

31st Radiation Research Society Annual Meeting (San Antonio, 1983)  
"Looking Inside the Black Box: Monte-Carlo Transport Codes"

International Symposium on Science With Soft X Rays (Brookhaven, 1983)  
"Soft X rays revisited"

Workshop on Electronic and Ionic Collision Cross Sections Needed in the Modelling of Radiation Interactions with Matter (Argonne, 1983)  
"The Transport of Low-Energy Electrons in Water and Some Physico-Chemical Implications"

IAEA Advisory Meeting on Nuclear and Atomic Data for Radiotherapy and Related Radiobiology (Rijswijk, 1985)  
"Cross Sections for Neutron Interactions with Carbon and Oxygen above 14 MeV"

Gordon Conference on Radiation Chemistry (New Hampshire, 1986)  
"Stochastic Effects in early Radiation Chemistry"

35th Radiation Research Society Annual Meeting (Atlanta, 1987)  
"Hard Facts from Soft X rays"

International Symposium on X-ray Microscopy (Brookhaven, 1988)  
"The Use of Soft X rays to Probe Mechanisms of Radiobiological Science"

NATO Advanced Research Workshop: Early Effects of Radiation on DNA (San Miniato, Italy, 1990)  
"Links Between Track Structure, Radiochemical Species and Cell Survival"

38th Radiation Research Society Annual Meeting (New Orleans, 1990)  
"Death Under the Floorboards? An Overview of the Radon Problem"

Second International Brachytherapy and Remote Afterloading Symposium (St. Louis, 1990)  
"The Application of Radiobiological Principles to Brachytherapy"

Ninth American Statistical Association Conference on Radiation and Health (Colorado, 1990)  
"Modifying factors in Biological Response: Radiation Quality and Dose Rate"

Ninth International Congress on Radiation Research (Toronto, 1991)  
"Biological Effects of Highly-Fractionated Effects of Protons in the South-Atlantic Anomaly"

World Space Congress (Washington DC, 1992)  
"Radiations in Space"

## BOOK

"Radon, Risk and Remedy", D. J. Brenner (V. H. Freeman, New York, 1989).

## PEER-REVIEWED PAPERS

1. Brenner, D. J. and Smith, F. A. Dose and LET Distributions due to Neutrons and Photons Emitted from Stopped Negative Pions. *Phys. Med. Biol.* 22, 451-465 (1977).
2. Brenner, D. J. and Reading, D. H. A Method for Measuring Neutron Spectra in a Stopping Pion Field, *Nucl. Instr. Meth.* 153, 137-144 (1978).
3. Jackson, D. F. and Brenner, D. J. Nuclear Interactions for Medical Purposes, *Prog. Part. Nucl. Phys.* 5, 143-204 (1981).
4. Brenner, D. J. Monte Carlo Self-Shielding Corrections for Use with Neutron Spectrum Unfolding Codes, *Nucl. Sci. Eng.* 78, 175-177 (1981).
5. Zaider, M., Dicello, J. F., Brenner, D. J., Takai, M., Raju, M. R. and Howard, J. Microdosimetry of Range-Modulated Beams of Heavy Ions I. Determination of the Yield of Projectile Fragments from Microdosimetric Spectra for Neon Beams. *Radiat. Res.* 87, 511-520 (1981).
6. Brenner, D. J., Dicello, J. F. and Zaider, M. An Interpretation of Some Biological Results Obtained in Range-Modulated Negative Pion Beams, *Int. J. Radiat. Oncol. Biol. Phys.* 8, 121-126 (1982).
7. Brenner, D. J. Calculation of Ionization Distributions in a Tissue-Equivalent Cloud Chamber Gas Mixture. *Radiat. Res.* 89, 194-202 (1982).
8. Zaider, M., Brenner, D. J., Hanson, K. and Minerbo, G. N. An algorithm for determining the proximity distribution from dose-averaged lineal energies. *Radiat. Res.* 91, 95-103 (1982).
9. Zaider, M., Brenner, D. J. and Wilson, W. E. The application of track calculations to radiobiology. I. Monte Carlo simulation of proton tracks. *Radiat. Res.* 95, 231-247 (1983).
10. Atari, N., Malik, S. R., Brenner, D. J., Hilko, R. and Bradbury, J. N. A Lyoluminescent tissue-equivalent dosimeter for pion therapy beams. *Phys. Med. Biol.* 28, 493-502 (1983).
11. Brenner, D. J. and Zaider, M. Soft x-rays as a tool to investigate radiation-sensitive sites in mammalian cells. *Proc. SPIE* 47, 172-179 (1983).
12. Goodhead, D. T. and Brenner, D. J. Estimation of a single physical property of low LET radiations which correlates with their biological effect. *Phys. Med. Biol.* 28, 485-492 (1983).

13. Subramanian, T. S. , Romero, J. L. , Brady, F. P. , Watson, J. W. , Fitzgerald, D. H. , Garrett, R. , Needham, G. A. , Ullman, J. L. , Zanelli, C. I. , Brenner, D. J. and Prael, R. E. Double differential inclusive hydrogen and helium spectra from neutron induced reactions on carbon at 27.4, 39.7, and 60.7 MeV. *Phys. Rev.* C28, 521 (1983).
14. Brenner, D. J. and Zaider, M. The application of track calculations to radiobiology.--II. Calculations of microdosimetric quantities. *Radiat. Res.* 98, 14-25 (1984).
15. Zaider, M. and Brenner, D. J. The application of track calculations to radiobiology.--III. Analysis of the molecular beam experiment results. *Radiat. Res.* 100, 213-221 (1984).
16. Zaider, M. and Brenner, D. J. On the stochastic treatment of fast chemical reactions. *Radiat. Res.* 100, 245-256 (1984).
17. Brenner, D. J. and Prael, R. E. The  $C(n,n')^{3\alpha}$  Cross-Section up to 60 MeV. *Nucl. Sci. Eng.* 88, 97-101 (1984).
18. Brenner, D. J. Neutron kerma values above 15 MeV calculated with a nuclear model applicable to light nuclei. *Phys. Med. Biol.*, 29, 437-441 (1984).
19. Brenner, D. J. and Zaider, M. A computationally convenient parameterisation of experimental angular distributions of low energy electrons elastically scattered off water vapour. *Phys. Med. Biol.*, 29, 443-447 (1984).
20. Zaider, M. and Brenner, D. J. Comments on 'V79 Survival following simultaneous or sequential irradiation by 15-MeV neutrons and Co photons' by Higgins et al. [*Radiat. Res.* 95, 45-56 (1983)]. *Radiat. Res.* 99, 438-441 (1984).
21. Zaider, M. and Brenner, D. J. Modification of the theory of dual radiation action for attenuated fields.--I. Basic formalism. *Radiat. Res.* 99, 484-491 (1984)
22. Brenner, D. J. and Zaider, M. Modification of the theory of dual radiation action for attenuated fields.--II. Application to the analysis of soft x-ray results. *Radiat. Res.* 99, 492-501 (1984).
23. Zaider, M. and Brenner, D. J. On the Microdosimetric Definition of Quality Factors. *Radiat. Res.* 103, 302-316 (1985).
24. Brenner, D. J. and Zaider, M. Stochastic and Deterministic Treatments of the Time Decay of Species Created by Heavy-Charged Particle Interactions. *Radiat. Prot. Dosimetry* 13, 127-131 (1985)
25. Hoshi, M., Goodhead, D. T., Brenner, D. J., Bance, D. A., Chmielewski, J. J., Paciotti, M. A. and Bradbury, J. N. Dosimetry Comparison and Characterisation of an Al K Ultrasoft x-ray Beam from an MRC Cold-cathode Source. *Phys. Med. Biol.*, 30, 1029-1041 (1985)

26. Zaider, M. and Brenner, D. J. Evaluation of a Specific Quality Function for Mutation Induction in Human Fibroblasts. *Rad. Prot. Dosim.*, 15, 79-82 (1986).
27. Subramanian, T. S. , Romero, J. L. , Brady, F. P. , Watson, J. W. , Fitzgerald, D. H. , Garrett, R. , Needham, G. A. , Ullman, J. L. . Zanelli, C. I. , Brenner, D. J. and Prael, R. E. Double Differential Inclusive Hydrogen and Helium Spectra from Neutron-Induced Reactions at 27.4, 39.7, and 60.7 MeV II. Oxygen and Nitrogen. *Phys. Rev. C* 34, 1580-1586 (1986)
28. Brenner, D. J., Zaider, M., Coyne, J. J., Menzel, H. G. and Prael, R. E. The Evaluation of Non-Elastic Neutron Cross-Sections on Carbon above 14 MeV. *Nucl. Sci. Eng.* 95, 311-315 (1987)
29. Brenner, D. J., Bird, R. P., Zaider, M., Goldhagen, P., Kliauga, P. J. and Rossi, H. H. Inactivation of Synchronized Mammalian Cells with Low-Energy X rays-- Results and Significance. *Radiat. Res.* 110, 413-427 (1987)
30. Brenner, D. J., Geard, C. R., Zaider, M. and Georgsson, M. A. Cell Survival and Plating Efficiency. *Radiat. Res.* 111, 572-576 (1987)
31. Brenner, D. J. Concerning the Nature of the Initial Damage Required for the Production of Radiation-Induced Exchange Aberrations. *Int. J. Radiat. Biol.* 52, 805-809 (1987)
32. 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)
33. Brenner, D. J. On the Probability of Interaction Between Elementary Radiation-Induced Chromosomal Injuries. *Rad. Environ. Biophys.* 27, 189-199 (1988)
34. Brenner, D. J. Stochastic Calculations of the Fast Decay of the Hydrated Electron in the Presence of Scavengers -- Tests of Model Consistency. *Rad. Phys. Chem.* 32, 157-162 (1988)
35. Zaider, M., Brenner, D. J., Hall, E. J. and Kliauga, P. J. The link between physics and biology. *Am. J. Clin. Oncol.* 11, 212-219 (1988).
36. Hei, T. K., Chen, D. J., Brenner, D. J. and Hall, E. J. Mutation induction by charged particles of defined LET. *Carcinogenesis* 9, 1233-1236 (1988).
37. Brenner, D. J. Precision and Accuracy in Radiotherapy. *Radiotherapy & Oncology* 14 159-162 (1989)
38. Miller, R. C. , Geard, C. R., Brenner, D. J., Komatsu, K., Marino, S. A. and Hall, E. J. Neutron-energy-dependent oncogenic transformation of C<sub>3</sub>H 10T1/2 cells. *Radiat. Res.* 117, 114-127 (1989)

39. Brenner, D. J., Comments on "It is Time to Reopen the Question of Thresholds in Radiation Exposure Responses" by J. R. Totter [Rad. Res. 114, 1-2 (1988)]. Radiat. Res. 116, 172-174, (1988).
40. Brenner, D. J. and Prael, R. E. Calculated differential secondary-particle production cross sections after non-elastic neutron interactions with carbon and oxygen between 15 and 60 MeV. Atomic Data Nucl. Data Tables 41, 71-130 (1989)
41. Brenner, D. J., Appropriate uses of the proposed ICRU-40 quality factor, Q(y). J. Radiol. Prot. 9, 51-52 (1989)
42. Vorgul, B. V., Merriam, G. R., Jr., Medvedovsky, C. and Brenner, D. J., Accelerated heavy particles and the lens: III. Cataract enhancement by dose fractionation. Rad. Res. 118 93-100 (1989).
43. Brenner, D. J. and Amols, H. I. Enhanced risk from low-energy screen-film mammography x rays. Brit. J. Radiol. 62, 910-914 (1989).
44. Brenner, D. J. The effectiveness of single alpha particles. In Low Dose Radiation: Biological Bases of Risk Assessment (Ed. Lancashire, J.) pp 477-480, Taylor and Francis, London and New York (1989)
45. Hoshi, M. Yokoru, K., Savada, S., Shizuma, K., Iwatani, K., Hasai, H., Oka, T., Morishima, H. and Brenner, D. J. Europium-152 activity induced by Hiroshima atomic-bomb neutrons: Comparison with the <sup>32</sup>P, <sup>60</sup>Co and <sup>152</sup>Eu activities in Dosimetry System 1986 (DS86). Health Physics 57, 831-837 (1989).
46. Brenner, D. J., Geard, C. R. and Hall, E. J. Mossbauer Cancer Therapy Doubts. Nature 339, 185-186 (1989).
47. Hall, E. J., Brenner, D. J., Hei, T. R. and Miller, R. C. The Microdosimetric link between oncogenic transformation data with neutrons and with charged particles. Radiat. Prot. Dosim., 31, 275-278 (1990).
48. Marchese M.J., Goldhagen, P.E., Zaider, M., Brenner, D.J. and Hall, E. J. The relative biological effectiveness of encapsulated iodine-125 photon radiation in human cells. I. Normal diploid fibroblasts. Int. J. Radiat. Oncol. Biol. Phys. 18, 1407-1413 (1990).
49. Marino, S. A., Harvey, J. R., Brenner, D. J. and Rossi, H. H. Measurements of the distribution of the separations between paired ions after passing through mylar. Radiat. Prot. Dosim., 31, 77-80 (1990).
50. Brenner, D. J. and Quan, H. Confidence Limits for Low Induced Frequencies of Oncogenesis in the Presence of a Background. Int. J. Radiat. Biol., 57, 1031-1046 (1990).
51. Geard, C. R. and Brenner, D. J. Chromosomal changes per cell nucleus per charged particle. Radiat. Prot. Dosim., 31, 285-290 (1990).

52. Brenner, D. J. The microdosimetry of radon daughters and its significance. *Radiat. Prot. Dosim.*, 31, 399-404 (1990).
53. 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, 745-758 (1990).
54. Miller, R.C., Brenner, D. J., Randers-Pehrson, G., Marino, S.A. and Hall, E. J., The Effects of the Temporal Distribution of Dose on Oncogenic Transformation by Neutrons and Charged Particles of Intermediate LET. *Radiat. Res.* 124, S62-68 (1990)
55. Brenner, D. J. Track Structure, Lesion Development and Cell Survival. *Radiat. Res.* 124, S29-37 (1990)
56. Brenner, D. J. and Quan, H. Graphs of Confidence Limits for Binomial Proportions - Pearson and Hartley Revisited. *The Statistician* 39 391-397 (1990).
57. Brenner, D. J. On the use of distributions of stopping pions as an indicator of the spatial distribution of the high-LET dose in negative pion radiotherapy. *Phys. Med. Biol.*, 35, 1585-1591 (1990).
58. 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. Instr. Meth.* B54, 411-416 (1991).
59. Brenner, D. J. and Hall, E. J., Conditions for the Equivalence of Continuous to Pulsed Low Dose Rate Brachytherapy. *Int. J. Radiat. Oncol. Biol. Phys.* 20, 181-190 (1991).
60. Brenner, D. J. The Contribution of Neutrons to the Health Effects at Hiroshima. *Health Physics* 60, 439-442 (1991).
61. Brenner, D. J. and Hall, E. J. Fractionated high dose rate versus low dose rate regimens for intracavitary brachytherapy of the cervix. I. General considerations based on radiobiology. *British Journal of Radiology* 64, 133-141 (1991).
62. Brenner, D. J., Martel, M. K. and Hall, E. J. Fractionated Regimes for stereotactic radiotherapy of recurrent tumors in the brain. *International Journal of Radiation Oncology, Biology, Physics* 21, 819-824 (1991).
63. Hall, E. J., Miller, R. C. and Brenner, D. J. Neoplastic transformation and the inverse dose rate effect for neutrons. *Radiat. Res.* 127, S75-80 (1991).
64. Straume, T., McDonald, J. C., Pederson, R. A., Brenner, D. J. and Dobson, R.L. Hiroshima-like neutrons from A-bomb replica: Physical basis for their use in biological experiments. *Radiation Research* 128, 133-142 (1991).

65. Brenner, D. J., Medvedovsky, C., Huang, Y., Herriam, G. R., and Vorgul, B. V. Accelerated heavy particles and the lens VI. RBE studies at low doses. *Radiat. Res.* 128, 73-81 (1991).
66. Hall, E. J. and Brenner, D. J., The Dose-Rate Effect Revisited - Radiobiological Considerations of Importance in Radiotherapy. *Int. J. Radiat. Oncol. Biol. Phys.* 21, 1403-1413 (1991).
67. Brenner, D. J. and Hall, E. J., Fractionated High Dose-Rate versus Low Dose-Rate Regimens for Intracavitary Brachytherapy of the Cervix. II. Equivalent Regimes for Combined Brachytherapy and External Radiation. *Int. J. Radiat. Oncol. Biol. Phys.* 21, 1415-1423 (1991).
68. Hall, E. J. Astor, M., and Brenner, D. J., Biological Intercomparison of Neutron Beams Used for Radiotherapy Generated by  $p^+ \rightarrow Be$  in Hospital-Based Cyclotrons. *British Journal of Radiology* 65, 66-71 (1992).
69. Brenner, D. J. Radon - Current Challenges in Cellular Radiobiology. *Int. J. Radiat. Biol.* 61, 3-13 (1992)
70. Hall, E. J. and Brenner, D. J., The Dose Rate Effect in Interstitial Brachytherapy - A Controversy Resolved. *British Journal of Radiology* 65, 242-247 (1992).
71. Brenner, D. J. and Hall, E. J., Radiation-induced oncogenic transformation: the interplay between dose, dose protraction, and radiation quality. To be Published in *Advan. Radiat. Biol.* (1992).
72. Brenner, D. J. and Ward, J. F., Constraints on Energy Deposition and Target Size of Multiply-Damaged Sites Associated with DNA Double-Strand Breaks. *International Journal of Radiation Biology*, 61, 737-748 (1992).
73. Hall, E.J. and Brenner, D.J., Needles, Wires and Chips - Advances in Brachytherapy. *Clin. Oncol.*, 4, 249-256 (1992).
74. Brenner, D. J. Dose, volume and tumor-control predictions in radiotherapy. To be Published in *Int. J. Radiat. Oncol. Biol. Phys.* (1992)
75. Brenner, D. J. Correlations between  $\alpha/\beta$  and  $T_{1/2}$ : implications for clinical biological modelling. To be Published in *Brit. J. Radiol.* (1992).
76. Brenner, D. J., Medvedovsky, C., Huang, Y., and Vorgul, B. V. Accelerated heavy particles and the lens VIII. Comparison between the effects of iron ions (190 keV/ $\mu$ m) and argon ions (88 keV/ $\mu$ m). To be Published in *Radiation Research* (1992).

PAPERS SUBMITTED FOR PUBLICATION

1. Brenner, D. J. The Influence of Cell Killing on Radiation Oncogenesis: Possible Implications for High-LET Risk Assessment at Medium Doses. Submitted to Radiation Research (1992).
2. 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. Submitted to Radiation Research (1992).
3. Brenner, D.J. and Sachs, R.K., Generalized Microdosimetric Calculations of Cell-to-Cell Variance. Submitted to Radiat. Protec. Dosim. (1992).
4. Sachs, R.K. and Brenner, D.J., The Production and Variance of Dicentric Chromosomal Aberrations: I. A Possible Role for Long-Lived DNA Double Strand Breaks. Submitted to Int. J. Radiat. Biol. (1992)
5. Brenner, D.J. and Sachs, R.K., Characteristic Molecular "Fingerprints" from Densely-Ionizing Radiation. Submitted to Science (1992).

PROCEEDINGS AND BOOK CHAPTERS

1. Brenner, D. J. and Jackson, D. F. A Cluster Approach to Stopped Pion Absorption on Oxygen and Carbon, A.I.P. Conference Proceedings, 47, 622 (1978).
2. Brenner, D. J. Pion Interactions with Light Nuclei and Applications to Radiotherapy, Rutherford Laboratory Report RL-79-032 (1979).
3. Dicello, J. F., Zaider, M. and Brenner, D. J. 'Dosimetry of Pions' In Advances in Radiation Protection and Dosimetry in Medicine, Thomas, R. H. and Perez-Mendez, V., Eds., Plenum Press, New York, (1980).
4. Brenner, D. J., Zaider, M., Dicello, J. F. and Michael, H. Theoretical Approaches to Energy Deposition in Small Sites. In Proceedings, 7th Symposium on Microdosimetry, Booz, J., Ebert, H. G. and Hartfiel, E. D., Eds., Commission of the European Communities (1981).
5. Brenner, D. J., Prael, R. E., Dicello, J. F. and Zaider, M. Improved Calculations of Energy Deposition from Fast Neutrons. In, Proceedings, Fourth Symposium on Neutron Dosimetry, Berger, G. and Ebert, H. G., Eds., Commission of the European Communities (1981).
6. Dicello, J. F., Brenner, D. J., Zink, S., Berardo, F. A. and Rosen, I. I. A Method for the Direct Measurement in the Treatment Volume of Neutron Dose from Pion Stars. In, Proceedings, Fourth Symposium on Neutron Dosimetry, Berger, G. and Ebert, H. G., Eds., Commission of the European Communities (1981).
7. Dicello, J. F. and Brenner, D. J. Radiation Quality of Beams of Negative Pions, in Pions and Heavy Ion Radiotherapy: Preclinical and Clinical Studies, (L.D. Skarsgard ed.) Elsevier Biomedical (1982).
8. Zaider, M and Brenner, D. J. Computational details of the Monte-Carlo simulation of proton and electron tracks. In Proceedings of workshop on the interface between radiation chemistry and radiation physics, Argonne National Laboratory ANL-82-88 (1983).
9. Brenner, D. J. and Zaider, M. The soft X-ray experiment revisited. A theoretical analysis. In Proc. of the 8th Symp. on Microdosimetry, Julich, Fed. Rep. of Germany (J. Booz and H. Ebert, eds.), EUR 8395, pp. 639-649 (1983).
10. Goodhead, D. T. and Brenner, D. J. The Mechanism of Radiation Action and the Physical Nature of Biological Lesions. In Proc. of the 8th Symp. on Microdosimetry, Julich, Fed. Rep. of Germany (J. Booz and H. Ebert, eds.), EUR 8395 (1983).
11. Brenner, D. J., Zaider, M. and Bradbury, J. N. Investigation of mechanisms of radiation action using track structure calculations for heavy ions. In Proc., 7th Int. Congress of Radiation Research (J. J. Broerse, C.V. Barendsen, H.B. Kal and A. J. Van der Kogel, Eds.), Martin Nijhoff, p.E1-05 (1983).

12. Zaider, M. and Brenner, D. J. Microdosimetry and Radiation Chemistry. In Proc., 7th Int. Congress of Radiation Research, (J. J. Broerse, G. V. Barendsen, H. B. Kal, and A. J. Van der Kogel, Eds.), Martin Nijhoff, p. E1-22 (1983).
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