CURRICULUM VITAE
for
Randy L. Jirtle, Ph.D.

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Present Academic Ranks and Titles:
Professor of Epigenetics, Department of Biological Sciences, NC State University, Raleigh, NC

Date of Birth: November 9, 1947 **Place:** Kewaunee, Wisconsin
Citizen of: USA
Education:

High School:	Algoma Public High School, 1961-1965
College:	University of Wisconsin-Madison, 1965-1970 Degree: B.S. (Nuclear Engineering)
Graduate School:	University of Wisconsin-Madison, 1970-1973, Degree: M.S. (Radiation Biology) University of Wisconsin-Madison, 1973-1976 Degree: Ph.D. (Major: Radiation Biology; Minor: Statistics)

A. ACHIEVEMENTS, SCHOLARLY HONORS AND SOCIETIES

1. Citations: 34,261; h-index: 86
2. Undergraduate Honors, *Tau Beta Pi, Sigma Xi*

B. PROFESSIONAL TRAINING AND ACADEMIC CAREER

1. U.S. Atomic Energy Commission Licensed Nuclear Reactor Operator, University of Wisconsin-Madison, 1968-1970.
2. University of Wisconsin-Madison, Postdoctoral Fellow in Physiology, (1976-1977).
3. Duke University, Associate in Radiology, (1977-1979).
4. Duke University, Assistant Professor of Radiology, (1979-1980).
5. University of Wisconsin-Madison, Visiting Assistant Professor in Human Oncology, (1981).
6. ENEA - C.R.E, Casaccia, Roma, Italia, Visiting Research Scientist at the Centro di Studi Nucleari, November, (1982).
7. Duke University, Assistant Professor of Radiology and Pathology, (1980-1983).
8. Duke University, Associate Professor of Radiology and Assistant Professor of Pathology, (1983-1990).
9. Duke University, Professor of Radiation Oncology and Assistant Professor of Pathology, (1990-1998).
10. Director-Division of Radiation and Molecular Oncology Research, (1991-2000).
11. Duke University, Director of Basic Research, Liver Surgery Program, (1992-1995).
12. Environmental Mutagenesis Society, Councilor, (2008-2009).
13. National Academy of Sciences Committee, Use of Emerging Science for Environmental Health Decisions, (2009).
14. Duke University Integrated Toxicology Program, Member, (1992-2012).
15. Duke University Integrated Toxicology Program, Member of the Board of Directors, (1998-2012).
16. Duke University Cell and Molecular Biology Training Program, Member, (1997-2012).
17. Duke University, Professor of Radiation Oncology and Associate Professor of Pathology, (1998-2012).
18. Duke University Program of Genetics, Member, (2002-2012).
19. Duke Primate Center's Internal Advisory Committee, (2002-2006).
20. Duke Lemur Center's Internal Advisory Committee, (2006-2012).
21. University of Bedfordshire, Professor of Epigenetics, Department of Sport & Exercise Sciences, Bedford, UK (2013-2016).
22. University of Wisconsin-Madison, Visiting Professor/Senior Scientist, McArdle Laboratory of Cancer Research, Department of Oncology, Madison, WI (2012-2021).
23. North Carolina State University, Professor of Epigenetics, Department of Biological

Sciences, Raleigh, NC (2014-present).

24. The Northern Communities Health Foundation Visiting Scientist, University of Adelaide, Robinson Research Institute, Adelaide, Australia, 2018.

C. ARTICLES

Refereed Journals

1. Jirtle, R., and Clifton, K.H**.** On carcinoma growth and vascular supply: A study of mouse mammary tumor strain MTG-B. **Proc. Soc. Exp. Biol. & Med.** 138: 267-269, 1971.
2. Jirtle, R., and Clifton, K.H**.** Effect of preirradiation of the tumor bed on the relative vascular space of mouse gastric adenocarcinoma 328 and mammary adenocarcinoma CA755. **Cancer Res.** 33: 764-768, 1973.
3. Clifton, K.H. and Jirtle, R**.** Mammary carcinoma cell population growth in preirradiated and unirradiated transplant sites**. Radiology** 117: 459-465, 1975.
4. **Thesis** for Doctor of Philosophy degree, University of Wisconsin-Madison, 1976, "Cellular Radiation Response as a Function of Tumor Size, Host Hematocrit, and Erythrokinetics in CA755 Tumor-Bearing Mice" (Referred by Thesis Review Committee: Clifton, K.H., Caldwell, W., Durand, R., Klotz, J. and Lane, R.).
5. Rankin, J.H.G., Jirtle, R., and Phernetton, T.M. Anomalous responses of tumor vasculature to norepinephrine and prostaglandin E2 in the rabbit. **Circulation Res.** 41: 496-502, 1977.
6. Gould, M., Jirtle, R., Crowley, J., and Clifton, K.H. The number of cells involved in the neutron induction of mammary neoplasms: A reevaluation. **Cancer Res.** 38: 189-192, 1978.
7. Jirtle, R., and Clifton, K.H**.** Erythrokinetics in mice bearing tumors in either preirradiated or unirradiated tissue**. Cell Tissue Kinet.** 11: 581-596, 1978.
8. Jirtle, R., and Clifton, K.H**.** The effect of tumor size and host anemia on cell survival after irradiation**. Int. J. Rad. Oncol. Biol. Phys.** 4: 395-400, 1978.
9. Jirtle, R., Clifton, K.H., and Rankin, J.H.G**.** Measurement of tumor blood flow in unanesthetized rats. **J. Nat'l Cancer Inst.** 60: 881-886, 1978.
10. Jirtle, R., Clifton, K.H., and Rankin, J.H.G**.** Effect of several drugs on the vascular resistance of MTW-9B tumors in W/Fu rats**. Cancer Res.** 38: 2385-2390, 1978.
11. Jirtle, R., Rankin, J.H.G., and Clifton, K.H**.** Effect of X-irradiation of the tumor bed on tumor blood flow and vascular response to drugs**. Br. J. Cancer** 37: 1033-1038, 1978.
12. Joines, W.T., Jirtle, R.L., Rafal, M.D., and Schaefer, D.J**.** Microwave power absorption differences between normal and malignant tissue**. Int. J. Rad. Oncol. Biol. Phys.** 6: 681-687, 1980.
13. Jirtle, R.L., Biles, C. and Michalopoulos, G**.** Morphological and histochemical analysis of hepatocytes transplanted into syngeneic hosts**. Am. J. Pathol.** 101: 115-126, 1980.
14. Jirtle, R.L**.** Blood flow to lymphatic metastases in conscious rats**. Europ. J. Cancer** 17: 53-60, 1981.
15. Jirtle, R.L., and Hinshaw, W.M**.** Estimation of malignant tissue blood flow with radioactively labeled microspheres**. Europ. J. Cancer Clin. Oncol.** 17: 1353-1355, 1981.
16. Jirtle, R.L., Michalopoulos, G., McLain, J.R., and Crowley, J**.** The survival of parenchymal hepatocytes exposed to ionizing radiation**. Cancer Res.** 41: 3512-3518, 1981.
17. Strom, S.C., Jirtle, R.L., Jones, R.S., Rosenberg, M.R., and Michalopoulos, G**.** Isolation, culture and transplantation of human hepatocytes**. J. Nat'l Cancer Inst.** 68: 771-778, 1982.
18. Novicki, D.L., Strom, S.C., Jirtle, R.L., and Michalopoulos, G**.** Cryopreservation of isolated rat hepatocytes. **In Vitro** 18: 393-399, 1982.
19. Jirtle, R.L., and Michalopoulos, G**.** Effects of partial hepatectomy on transplanted hepatocytes**. Cancer Res.** 42: 3000-3004, 1982.
20. Jirtle, R.L., McLain, J.R., Strom, S.C,. and Michalopoulos, G**.** Repair of radiation damage in noncycling parenchymal hepatocytes**. Br. J. Radiology** 55: 847-851, 1982.
21. Kaelin, W.G., Jr., Shrivastav, S., Shand, D.G., and Jirtle, R.L**.** Effect of verapamil on malignant tissue blood flow in SMT-2A tumor bearing rats**. Cancer Res.** 42: 3944-3949, 1982.
22. Michalopoulos, G., Jirtle, R.L., Kligerman, A.D., Cianciulli, D., and Novotny, A**.** Liver regeneration studies in primary culture of hepatocytes **Cancer Res.** 42: 4673-4682, 1982.
23. Novicki, D.L., Jirtle, R.L., and Michalopoulos, G**.** Establishment of two rat hepatoma cell strains produced by a carcinogen initiation, phenobarbital promotion protocol. **In Vitro** 19: 191-202,1983.
24. Strom, S.C., Jirtle, R.L., and Michalopoulos, G**.** Genotoxic effects of 2-acetylamino-

fluorene on rat and human hepatocytes**. Envir. Health Perspect.** 49: 165-170, 1983.
25. Strom, S.C., Novicki, D.L., Novotny, A., Jirtle, R.L., and Michalopoulos, G**.** Human hepatocyte-mediated mutagenesis and DNA repair activity**. Carcinogenesis** 4: 683-686, 1983.
26. Shrivastav, S., Kaelin, W.G., Jr., Joines, W.T., and Jirtle, R.L**.** Microwave hyperthermia and its effect on tumor blood flow**. Cancer Res.** 43: 4665-4669, 1983.
27. Butterworth, B.E., Earl, L.L., Strom, S.C., Jirtle, R.L., and Michalopoulos, G**.** Induction of DNA repair in human and rat hepatocytes by 1,6-dinitropyrene**. Mutat. Res.** 122: 73-80, 1983.
28. Gould, M.N., Cathers, L.E., Clifton, K.H., Howard, S., Jirtle, R.L., Mahler, P.A., Mulcahy, R.T., and Thomas, F**.** The influence of *in situ* repair systems on survival of several irradiated parenchymal cell types**. Br. J. Cancer (Suppl. VI)** 49: 191-196, 1984**.**
29. Jirtle, R.L., Michalopoulos, G., Strom, S.C., DeLuca, P.M., and Gould, M.N**.** The survival of parenchymal hepatocytes irradiated with low and high LET radiation**. Br. J. Cancer (Suppl. VI)** 49: 197-202, 1984.
30. Kaelin, W.G., Jr., Shrivastav, S., and Jirtle, R.L**.** Blood flow to primary tumors and lymph node metastases in SMT-2A tumor bearing rats following intravenous flunarizine**. Cancer Res.** 44: 896-899, 1984.
31. Jirtle, R.L., DeLuca, P.M., Hinshaw, W.M., and Gould, M.N**.** Survival of parenchymal hepatocytes irradiated with 14.3 MeV neutrons**. Int. J. Radiat. Oncol. Biol. Phys.** 10: 895-899, 1984.
32. Reddy, J.K., Jirtle, R.L., Watanabe, T.K., Reddy, N.K., Michalopoulos, G., and Qureshi, S.A**.** Response of hepatocytes transplanted into syngeneic hosts and heterotransplanted into athymic nude mice to peroxisome proliferators**. Cancer Res.** 44: 2582-2589, 1984.
33. Butterworth, B.E., Bermudez, E., Smith-Oliver, T., Earle, L., Cattley, R., Martin, J., Popp, J.A., Strom, S., Jirtle, R., and Michalopoulos, G**.** Lack of genotoxic activity of di(2-ethylhexyl)phthalate (DEHP) in rat and human hepatocytes**. Carcinogenesis** 5: 1329-1335, 1984.
34. Rosenberg, M.R., Novicki, D.L., Jirtle, R.L., Novotny, A., and Michalopoulos, G. Promoting effect of nicotinamide on the development of renal tubular cell tumors in rats initiated with diethyl-nitrosamine**. Cancer Res.** 45: 809-814, 1985.
35. Bone, S.N., III, Michalopoulos, G., and Jirtle, R.L**.** The ability of partial hepatectomy to induce gamma-glutamyltranspeptidase in regenerated and transplanted hepatocytes of Fischer 344 and Wistar-Furth rats**. Cancer Res.** 45: 1222-1228, 1985.
36. Shrivastav, S., Joines, W.T., and Jirtle, R.L**.** Effect of 5-hydroxytryptamine on tissue blood flow and microwave heating of tumors. **Cancer Res.** 45: 3203-3208, 1985.
37. Jirtle, R.L., Pierce, L.J., Crocker, I.R., and Strom, S.C**.** Radiation protection of rat parenchymal hepatocytes with S-2-(3-aminopropylamino)ethylphosphorothioic acid**. Radiother. Oncol.** 4: 231-237, 1985.
38. France, H.G., Mansbach, C.M., and Jirtle, R.L**.** Protection against colonic radiation injury in rats by intracolonic WR2721**. Gastroenterology** 91: 644-50, 1986.
39. Brooks, A.L., Guilmette, R.A., Hahn, R.R., and Jirtle, R.L**.** Uptake and clearance of ^{238}Pu from liver cells transplanted into fat pads of Fischer 344 rats**. Int. J. Radiat. Biol.** 50:631-9, 1986.
40. Jirtle, R.L., and Michalopoulos, G**.** Enhancement of the clonability of adult parenchymal hepatocytes with the liver tumor promoter phenobarbital**. Carcinogenesis** 7: 1813-17, 1986.
41. Loury, D.J., Smith-Oliver, T., Strom, S., Jirtle, R., Michalopoulos, G., and Butterworth, B.E**.** Assessment of unscheduled and replicative DNA synthesis in hepatocytes treated *in vivo* and *in vitro* with unleaded gasoline of 2,2,4-trimethylpentane**. Toxicol. Appl. Pharmacol**. 85: 11-23, 1986.
42. Eckl, P.M., Whitcomb, W.W., Michalopoulos, G., and Jirtle, R.L**.** Effects of EGF and calcium on adult parenchymal hepatocyte proliferation**. J. Cell Physiol.** 132: 363-366, 1987.
43. Eckl, P.M., Strom, S.C., Michalopoulos, G., and Jirtle, R.L**.** Induction of sister chromatid exchanges in cultured adult rat hepatocytes by directly and indirectly acting mutagens/carcinogens**. Carcinogenesis** 8: 1077-1083, 1987**.**
44. Michalopoulos, G.K., Eckl, P.M., Cruise, J.L., Novicki, D.L., and Jirtle, R.L**.** Mechanisms of rodent liver carcinogenesis**. Toxicol. Indust. Health** 3: 119-128, 1987.
45. Jirtle, R.L**.** Chemical modification of tumor blood flow**. Int. J. Hyperthermia** 4: 355-371, 1988.

46. Alati, T., Van Cleeff, M., Strom, S.C., and Jirtle, R.L. Radiation sensitivity of adult human parenchymal hepatocytes. **Radiat. Res.** 115: 152-160, 1988.
47. Eckl, P.M., Meyer, S.A., Whitcomb, W.R., and Jirtle, R.L. Phenobarbital reduces EGF receptors and the ability of physiological concentrations of calcium to suppress hepatocyte proliferation. **Carcinogenesis** 9: 479-483, 1988.
48. Butterworth, B.E., Smith-Oliver, T., Earle, L., Loury, D.J., White, R.D., Doolittle, D.J., Working, P.K., Cattley, R.C., Jirtle, R.L., Michalopoulos, G., and Strom, S. Use of primary cultures of hepatocytes in toxicology studies. **Cancer Res.** 49: 1075-1084, 1989.
49. Meyer, S.A., and Jirtle, R.L. Phenobarbital decreases hepatocyte EGF receptor expression independent of protein kinase C activation. **Biochem. Biophys. Res. Commun.** 158: 652-659, 1989.
50. Alati, T., Van Cleeff, M., Strom, S.C., and Jirtle, R.L. Radiosensitivity of parenchymal hepatocytes as a function of oxygen concentration. **Radiat. Res.** 118: 488-501, 1989.
51. Alati, T., Eckl, P., and Jirtle, R.L. An *in vitro* micronucleus assay for determining the radiosensitivity of parenchymal hepatocytes. **Radiat. Res.** 119: 562-568, 1989.
52. Meyer, S.A., Gibbs, T.A., and Jirtle, R.L. Tumor promoters phenobarbital and 12-0-tetra-decanoyl-phorbol-13-acetate independently reduce EGF binding by rat hepatocytes. **Cancer Res.** 49: 5907-5912, 1989.
53. Gebhardt, R., Jirtle, R., Moorman, A.F.M., Lamers, W.H., and Michalopoulos, G. Induction of glutamine synthetase and transient co-expression with carbamoylphosphate synthetase in hepatocytes transplanted into fat pads of syngeneic hosts. **Histochemistry** 92: 337-342, 1989.
54. Joines, W.T., Shrivastav, S., and Jirtle, R.L. A comparison using tissue electrical properties and temperature rise to determine relative absorption of microwave power in malignant tissue. **Med. Phys.** 16: 840-844, 1989.
55. Anscher, M.S., Crocker, I.R., and Jirtle, R.L. Transforming growth factor-ß1 expression in irradiated liver. **Radiat. Res.** 122: 77-85, 1990.
56. Brockenbrough, J.S., Meyer, S.A., Li, C., and Jirtle, R.L. A reversible and phorbol ester-specific defect of protein kinase C translocation in hepatocytes isolated from phenobarbital-treated rats. **Cancer Res.** 51: 130-136, 1991.
57. Jirtle, R.L., and Meyer, S.A. Liver tumor promotion: Effect of phenobarbital on EGF and protein kinase C signal transduction and transforming growth factor-ß1 expression. **Digest. Dis. Sci.** 36: 659-668, 1991.
58. Eckl, P.M., Alati, T., and Jirtle, R.L. The effects of a purified diet on sister chromatid exchange frequencies and mitotic activity in adult rat hepatocytes. **Carcinogenesis** 12: 643-646, 1991.
59. Jirtle, R.L., Carr, B.I., and Scott, C.D. Modulation of insulin-like growth factor-II/mannose 6-phosphate receptors and transforming growth factor-ß1 during liver regeneration. **J. Biol. Chem.** 266: 22444-22450, 1991.
60. Hwang, J.-J., Hsia, M.T.S., and Jirtle, R.L. Induction of sister chromatid exchanges and micronuclei in primary cultures of rat and human hepatocytes by the peroxisome proliferator, [4-chloro-6-(2,3-xylidino)-2-pyrimidinylthio]acetic acid (Wy-14,643). **Mutat. Res.** 286: 123-133, 1993.
61. Anscher, M.S., Peters, W.P., Reisenbichler, H., Petros, W.P., and Jirtle, R.L. Transforming growth factor ß as a predictor for the development of liver and lung toxicity in advanced breast cancer patients treated with dose chemotherapy and autologous bone marrow transplantation. **N. Eng. J. Med.** 328: 1592-1598, 1993.
62. Bursch, W., Oberhammer, F., Jirtle, R.L., Askari, M., Sedivy, R., Grasl-Kraupp, B., Purchio, A.F., and Schulte-Hermann, R. Transforming growth factor ß1 as a signal for induction of cell death by apoptosis. **Br. J. Cancer.** 67: 531-536, 1993.
63. Eckl, P.M., Anderson-Carnahan, L., and Jirtle, R.L. Aquatic genotoxicity testing with rat hepatocytes in primary culture. I. SCE-induction. **Sci. Total Environ.** 136: 111-119, 1993.
64. Jirtle, R.L., Haag, J.D., Ariazi, E.A., and Gould, M.N. Increased mannose 6-phosphate/insulin-like growth factor II receptor and TGF-ß1 levels during monoterpene-induced regression of mammary tumors. **Cancer Res.** 53:3849-4127, 1993.
65. Zhang, Y., Joines, W.T., Jirtle, R.L, and Samulski, T.V. Theoretical and measured electric field distributions within an annular phased array: consideration of source antennas. **IEEE Trans. Biomed. Eng.** 40: 780-787, 1993.
66. Schulte-Hermann, R., Bursch, W., Kraupp-Grasl, B., Oberhammer, F., Wagner, A., and Jirtle, R.L. Cell proliferation and apoptosis in normal liver and preneoplastic foci. **Environ. Health Perspect.** 101: 87-90, 1993.

67. Takemoto-Hambleton, R., Joines, W.T., Jirtle, R.L., and Samulski, T.V**.** Modeling aperture antennas in the near- and far-field regions using subarrays of equivalent uniformly illuminated apertures**. Int. J. Hyperthermia** 9: 37-49, 1993.
68. Saperstein, L.A., Jirtle, R.L., Farouk, M., Thompson, H. J., Chung, K.S and Meyers, W.C**.** Transforming growth factor-ß1 and mannose 6-phosphate/insulin-like growth factor-II receptor expression during intrahepatic bile duct hyperplasia and biliary fibrosis in the rat**. Hepatology** 19: 412-417, 1994.
69. Joines, W.T., Zhang, Y., Li, C., and Jirtle, R.L**.** The measured electrical properties of normal and malignant human tissues from 50 to 900 MHz**. Med. Phys.** 21: 1-4, 1994.
70. Murase, T., Jirtle, R.L., and McDonald, G.B**.** TGF-ß concentrations in the patients with lymphoma and leukemia receiving chemotherapy and marrow transplantation**. Blood** 83: 2383, 1994.
71. Anscher, M.S., and Jirtle, R.L**.** Role of transforming growth factor-ß and hepatocyte growth factor in late normal tissue effects of radiation**. Rad. Onc. Invest.** 1: 305-313, 1994.
72. Jirtle, R.L., Hankins, G.R., Reisenbichler, H., and Boyer, I.J**.**. Regulation of mannose 6-phosphate/insulin-like growth factor-II receptors and transforming growth factor beta during liver tumor promotion with phenobarbital**. Carcinogenesis** 15: 1473-1478, 1994.
73. Reisenbichler, H., and R.L. Jirtle**.** BSA treatment of plasticware reduces TGFß binding**. Biotechniques** 17: 675-676, 1994.
74. Anscher, M.S., Prescott, D.M., Marks, L.B., Reisenbichler, H., Murase, T., Bentel, G.C., Spencer, D., Sherouse, G., and Jirtle, R.L**.** Changes in plasma TGF-ß levels during pulmonary radiotherapy as predictor of the risk of developing radiation pneumonitis**. Int. J. Radiat. Oncol. Biol. Phys.** 30: 671-676, 1994.
75. Reisenbichler, H., Chari, R.S., Boyer, I.J., and Jirtle, R.L**.** Transforming growth factor-beta receptors type I, II and III in Phenobarbital-promoted rat liver tumors. **Carcinogenesis** 15: 2763-2767, 1994.
76. Murase, T., Anscher, M.S., Petros, W.P., Peters, W.P., and Jirtle, R.L**.** Changes in plasma TGF-ß in response to high-dose chemotherapy for stage II breast cancer: implications for the prevention of hepatic venoocclusive disease and idiopathic interstitial pneumonitis**. Bone Marrow Transplant.** 30: 671-676, 1994.
77. Andersen, M.E., Mills J.J., Jirtle, R.L., and Greenlee, W.F. Negative selection in hepatic tumor promotion in relation to cancer risk assessment. **Toxicology** 102: 223-237, 1995.
78. Chari, R.S, Price, D.T., Sue, S.R., Meyers, W.C., and Jirtle, R.L**.** Down-regulation of transforming growth factor beta receptors type I, II and III during liver regeneration**. Am. J. Surgery** 169: 126-132, 1995.
79. Mills, J.J., Chari, R.S., Boyer, I.J., Gould, M.N., and Jirtle, R.L**.** Induction of apoptosis in liver tumors by the monoterpene perillyl alcohol**. Cancer Res**. 55: 979-983, 1995.
80. Anscher, M.S., Kong, F.-M., Murase, T., and Jirtle, R.L**.** Normal tissue injury after cancer therapy is a local response exacerbated by an endocrine effect of TGFß. **Br. J. Radiology** 68: 331-333, 1995.
81. De Souza, A.T., Hankins, G.R., Washington, M.K., Fine, R.L., Orton, T.C., and Jirtle, R.L**.** Frequent loss of heterozygosity on 6q at the mannose 6-phosphate/insulin-like growth factor II receptor locus in human hepatocellular tumors**. Oncogene** 10: 17251729, 1995.
82. Sue, S.R., Chari, R.S., Kong, F.-M., Mills, J.J**.** Fine, R.L., and Jirtle, R.L., Meyers, W.C**.** Transforming growth factor beta receptors and mannose 6-phosphate/insulin-like growth factor II receptor expression in human hepatocellular carcinomas. **Ann. Surg.** 222: 171-178, 1995.
83. Kong, F.-M.., Anscher, M.S., Murase, T., Abbott, B.D., Iglehart, J.D., and Jirtle, R.L**.** Elevated plasma transforming growth factor ß1 levels in breast cancer patients decrease following surgical removal of the tumor. **Ann. Surg**. 222: 155-162, 1995.
84. Lawrence, T.S., Robertson, J.M., Anscher, M.S., Jirtle, R.L., Ensminger, W.D., and Fajardo, L.F**.** Hepatic toxicity resulting from cancer treatment. **Int. J. Radiat. Oncol. Biol. Phys.** 31: 1237-1248, 1995.
85. Song, J. J., Celeste, A. J., Kong, F. M., Jirtle, R.L., Rosen, V. and Thies, S. Bone morphorgenetic protein-9 binds to liver cells and stimulates proliferation. **Endocrinology,** 136: 4293-4297, 1995.
86. Barcellos-Hoff, M.H., Ehrhart, E.J., Kahlia, M., K., Jirtle, R.L., Flanders, K., and Tsang, M.L.-S**.** Immunohistochemical identification of active TGF-ß *in situ* using engineered tissue**. Am. J. Pathol.** 147(5): 1228-1237, 1995.
87. De Souza A.T., Hankins, G.R., Washington, M.K., Orton, T.C., and Jirtle, R.L *M6P/IGF2R* gene is mutated in human hepatocellular carcinomas with loss of heterozygosity**. Nat.**

Genet. 11: 447-449, 1995.
88. Mansbach, J.M., Mills, J.J., Boyer, I. J., De Souza, A.T., Hankins, G.R., and Jirtle, R.L., Phenobarbital selectively promotes initiated cells with reduced TGFß receptor levels. **Carcinogenesis** 17: 171-174, 1996.
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90. Kong, F.-M., Washington, M.K. Jirtle, R.L., and Anscher, M.S**.** Plasma transforming Growth Factor ß1 reflects disease status in patients with lung cancer after radiotherapy: a possible tumor marker. **Lung Cancer** 16: 47-59, 1996.
91. De Souza, A.T., Mills, J.J., Yamada, T., and Jirtle, R.L. Imprinted genes in liver carcinogenesis. **FASEB J**. 11: 60-67, 1997.
92. Anscher, M.S., Kong, F.M., Marks, L.B., Bentel, G.C., and Jirtle, R.L., Changes in plasma transforming growth factor beta during radiotherapy and the risk of symptomatic radiation-induced pneumonitis. **Int. J Radiat. Oncol. Biol. Phys**. 37(2): 253-258, 1997.
93. Yamada, T., De Souza, A.T., Finkelstein, S., and Jirtle, R.L. Loss of the gene encoding mannose 6-phosphate/insulin-like growth factor II receptor is an early event in liver carcinogenesis. **Proc. Natl. Acad. Sci**. **USA** 94: 10351-10355, 1997.
94. Isfort, R.J., Cody, D.B., Doersen, C.J., Richards, W.G., Yoder, B.K., Wilkinson, J.E., Kier, L.D., Jirtle, R.L., Isenberg, J.S., Klounig, J.E. and Woychik, R.P**.** The tetratricopeptide repeat containing Tg737 gene is a liver neoplasia tumor suppressor gene**. Oncogene** 15: 1797-1803, 1997.
95. Marks, L.B., Munley, M.T., Bentel, G.C., Scarfone, C., Zhou, S.M., Hollis, D., Jaszczak, R., Sibley, G.S., Coleman, R.E., Kong, F.M., Jirtle, R.L., Tapson, V., and Anscher, M. Physical and biological predictors of changes in whole lung function following thoracic irradiation. **Int. J. Radiat. Oncol. Biol. Phys.** 39: 563-570, 1997.
96. DiPaola, R.S., Weiss, R.E., Cummings, K.B., Kong, F.M., Jirtle, R.L., Anscher, M., Gallo, J., Goodin, S., Thompson, S., Rasheed, Z., Aisner, J., and Todd, M**.** Effect of 13 cis-retinoic acid and alpha interferon on transforming growth factor-ß1 in patients with rising prostate specific antigen. **Clin. Cancer Res.** 11: 1999-2004, 1997.
97. Mills, J.J., Falls, J.G., De Souza, A.T., and Jirtle, R.L. Imprinted *M6p/Igf2 receptor* is mutated in rat liver tumors. **Oncogene** 16: 2797-2802, 1998.
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200. Nye, M.D., King, K.E., Darrah, T.H., Maguire, R., Jima, D.D., Huang, Z., Mendez, M.A., Fry, R.C., Jirtle, R.L., Murphy, S.K., and Hoyo, C. Maternal blood lead concentrations, DNA methylation of MEG3 DMR regulating the DLK1/MEG3 imprinted domain and early growth in a multiethnic cohort. **Environ. Epigenet.** 2: 2016, dvv009 DOI: http://dx.doi.org/10.1093/eep/dvv009.
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203. Skaar, D.A., Jirtle, R.L. Analysis of Imprinted Gene Regulation. **Methods Mol. Biol.** 1589: 161-183, 2017.
204. Vaiserman A.M., Koliada A.K., and Jirtle R.L. Non-genomic transmission of longevity between generations: potential mechanisms and evidence across species. **Epigenetics Chromatin** 10: 38. doi: 10.1186/s13072-017-0145-1, 2017
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208. Jirtle, R.L. Memorial Tribute to Kelly H. Clifton. **Radiat. Res.** 195:218-220, 2021.
209. Skaar, D.A., Dietze, E.C., Alva-Ornelas, J.A., Ann, D., Schones, D.E., Hyslop, T., Sistrunk, C., Zalles, C., Ambrose, A., Kennedy, K., Idassi, O., Miranda Carboni, G., Gould, M.N., Jirtle, R.L., and Seewaldt, V.L. Epigenetic dysregulation of KCNK9 imprinting and triple-negative breast cancer. **Cancers (Basel)** 13: 6031, 2021.
210. Jirtle, R.L. The science of hope: an interview with Randy Jirtle. **Epigenomics** 14:299-302, 2022.
211. Jima, D.D., Skaar, D.A., Planchart, A., Motsinger-Reif, A., Cevik, S.E., Park, S.S., Cowley, M., Wright, F., House, J., Liu, A., Jirtle, R.L., and Hoyo, C. Genomic map of candidate human imprint control regions: the imprintome. **Epigenetics** 17: 1920-1943, 2022. ***[Journal Cover]***
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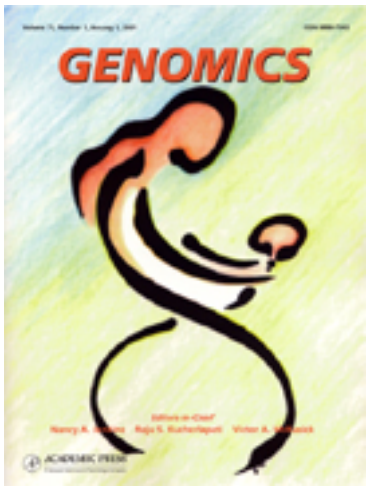
213. Cevik, S.E., Skaar, D.A., Jima, D.D., Liu, A.J., Østbye, T., Whitson, H.E., Jirtle, R.L., Hoyo, C, and Planchart, A. DNA methylation of imprint control regions associated with Alzheimer's disease in non-Hispanic Blacks and non-Hispanic Whites. **Clin. Epigenetics** 16: 58. doi: 10.1186/s13148-024-01672-4, 2024

Journal Covers



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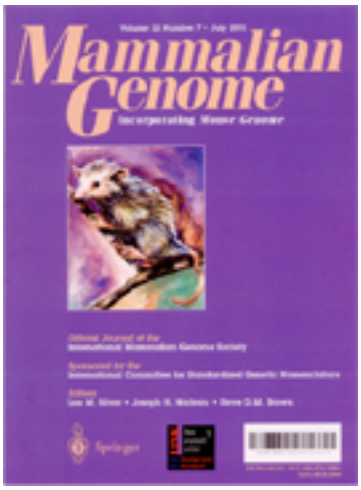

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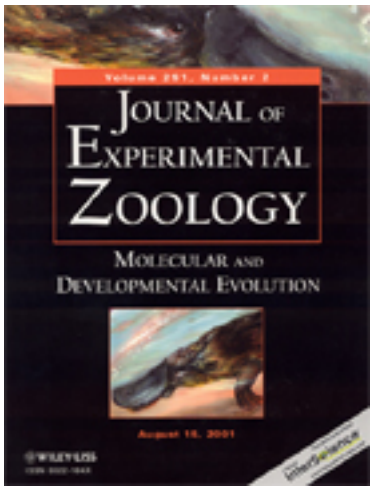

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Jirtle ***Gastroenterology*** 126: 1190-1201, 2004

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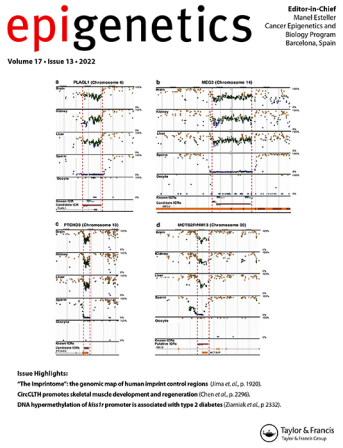

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Book Chapters

1. Butterworth, B.E., Doolittle, D.J., Working, P.K., Strom, S.C., Jirtle, R.L. and Michalopoulos, G**.** Chemically-induced DNA repair in rodent and human cells**.** In: **Banbury Report 13**: 101-122, 1983.
2. Michalopoulos, G., Strom, S.C., Novotny, A.R., Novicki, D.L., and Jirtle, R.L**.** Human hepatocytes in primary culture: Applications in studies of human carcinogenesis**.** In: ***In Vitro*** **Models for Human Disease: Carcinomas of Liver and Pancreas**, (Weber, M. ed.), CRC Press, 1984.
3. Jirtle, R.L., Michalopoulos, G., McLain, J.R., and Crowley, J**.** Transplantation system for determining the clonogenic survival of parenchymal hepatocytes exposed to ionizing radiation**.** In: **Year Book of Cancer**, Year Book Medical Publishers, 1984.
4. Jirtle, R.L., and Michalopoulos, G**.** *In vivo* clonal assay system for parenchymal hepatocytes**.** In: **Cell Clones: Manual of Mammalian Cell Techniques**, (Hendry, J.H., and Potten, C.S., eds.), pp. 139-151, Churchill Livingstone, London, England, 1985.
5. Michalopoulos, G., Strom, S.C., and Jirtle, R.L**.** Use of hepatocytes for studies of mutagenesis and carcinogenesis**.** In: **Isolated and Cultured Hepatocytes**, (Guillouzo, A., ed.), pp. 333-352, John Libbey & Company, London, England, 1986.
6. Jirtle, R.L., Anscher, M.A., and Alati, T**.** Radiation sensitivity of the liver**.** In: **Advances in Radiation Biology**, Volume 14, (Lett, J.T., and Altman, K.I., eds.), pp. 269-311, Academic Press, Orlando, FL, 1990.
7. Jirtle, R.L., Meyer, S., and Brockenbrough, J.S**.** Liver tumor promoter phenobarbital: A biphasic modulator of hepatocyte proliferation**.** In: **Progress in Clinical and Biological Research, Chemically Induced Cell Proliferation: Implications for Risk Assessment**, Volume 369, (Slaga, T.J. *et al.,* eds.), pp. 209-216, Wiley-Liss, New York, New York, 1991.
8. Jirtle, R.L., and Anscher, M.S**.** The role of TGF-ß1 in the pathogenesis of radiation induced hepatic fibrosis**.** In: **Radiation Research-A Twentieth-Century Perspective**, Volume 2, (Chapman, J.D., Dewey, W.C., and Whitmore, G.F., eds.), pp. 819-823, Academic Press, New York, New York, 1991.
9. Jirtle, R.L**.** Liver Tumor Promotion and Breast Cancer Chemoprevention: Common Mechanisms**.** In: **Non-Genotoxic Carcinogenesis**, (Cockburn, A., and Smith, L.L., eds.), pp. 157-172, Springer, Verlag, Berlin, Germany, 1995.
10. Mills, J.J., Jirtle, R.L., and Boyer, I.J**.** Mechanisms of Liver Tumor Promotion**.** In: **Liver Regeneration and Carcinogenesis: Cellular and Molecular Mechanisms.** (Jirtle, R.L., ed.), pp. 199-226, Academic Press, San Diego, California, 1995.
11. Jirtle, R.L**.** Liver Tumor Promotion: A Process of Natural Selection. In: **Growth Factors and Tumor Promotion: Implications for Risk Assessment,** (Slaga, T.J. *et al.,* eds.), pp. 149-159, Wiley-Liss, New York, New York, 1995.
12. Kong, F.M., Anscher, M.S. and Jirtle, R.L. "Transforming Growth Factor Beta: A Plasma Tumor Marker*.* In: **Methods in Molecular Biology: Tumor Marker Protocols**. (Hanausek, M., and Walaszek, Z., eds.), pp. 417-430, Humana Press, Totwa, New Jersey, 1998.
13. Anscher, M., Barcellos-Hoff, M.H., Kong, F.-M., and Jirtle, R.L. Biological Functions of TGFß. In: **TGFß and Cancer.** (Benson, J.R., ed.), pp. 33-43, R.G. Landes Company, Austin, Texas, 1998.
14. Jirtle, R.L., Multifaceted M6P/IGF2R Liver Tumour Suppressor. In: **Normal and Malignant Liver Cell Growth** (Fleig, W., ed.), pp. 136-140, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999.
15. Jirtle, R.L., Mannose 6-Phosphate Receptors. In: **Encyclopedia of Molecular Biology**, (Creidton, T.E., ed.), pp. 1441-1447, Wiley-Liss, Inc., New York, New York, 1999.
16. Murphy, S.K, and Jirtle, R.L. Non-Genotoxic Causes of Cancer. In: **Cancer Handbook**, (Alison, M., ed.), pp. 317-344, Macmillan Reference, Ltd., London, United Kingdom, 2002.
17. Killian, J.K., Nolan, C.M., Jirtle, R.L. The evolution of genomic imprinting in Jurassic mammals. In: **Genetic Resources for the Next Century**. O. Ryder, ed. University of California Press, San Diego. in press, 2002.
18. Jirtle, R.L., Mannose 6-Phosphate/Insulin-Like Growth Factor II Receptor. In: **Encyclopedia of Molecular Medicine**, (Creighton, T.E., ed.), pp. 000-000, Wiley-Liss, Inc., New York, New York, 2002.
19. Bernal, A.J., Murphy, S.K., and Jirtle, R.L. Mouse Models of Epigenetic Inheritance. In: **Handbook of Epigenetics**, (Tollefsbol, T., ed.), pp. 233-249, Academic Press, 2010.
20. Jirtle, R, Bernal, A, Skaar D. Epigenetic Medicine. In: **Encyclopedia of Molecular Cell Biology and Molecular Medicine** (Meyers, R.A., ed.), pp. 927-972, John Wiley and Sons, Inc, Hoboken, NJ, 2012.

21. Jirtle, R.L. Epigenetics: How Genes and Environment Interact. In: **Environmental Epigenomics in Health and Disease: Epigenetics and Disease Origins,** (Jirtle, R.L. and Tyson, F.L., eds.), pp. 3-30, Springer, Heidelberg, Germany, 2013.

D. BOOKS

1. *Liver Regeneration and Carcinogenesis: Cellular and Molecular Mechanisms*. (R.L. Jirtle, ed.), Academic Press, San Diego, California, 1995.
2. *Environmental Epigenomics in Health and Disease: Epigenetics and Disease Origins* (R.L. Jirtle and F.L. Tyson, eds.), Springer, Heidelberg, Germany, 2013.
3. *Environmental Epigenomics in Health and Disease: Epigenetics and Complex Diseases* (R.L. Jirtle and F.L. Tyson, eds.), Springer, Heidelberg, Germany, 2013.

E. LABORATORY WEBSITE

1. Genomic Imprinting Website: http://www.geneimprint.com (1995-present).

F. PATENTS

1. *M6P/IGF-II Receptor* Tumor Suppressor Gene
Patent Number: 5,874,222
Date of Patent: Feb. 23, 1999
ABSTRACT
The present invention relates, in general, to a suppressor and, in particular, to the mannose 6-phosphate/insulin-like growth factor-II (M6P/IGF-II) receptor and to diagnostic and therapeutic approaches based on same.

2. Cancer Prognosis with the *M6P/IGF-II Receptor*
Patent Number: 6,218,127
Date of Patent: April 17, 2001
ABSTRACT
The present invention relates, in general, to cancer prognosis and, in particular, to a method of assessing the prognosis of a patient using the M6P/IGF2-II receptor.

3. Compositions and Methods Related to Differentially Methylated DNA Sequences Associated with Monoallelic Expression and Disease
Patent Filed: July 9, 2021
Docket No: 297/337/2

ABSTRACT

The subject matter described herein relates to the identification and analysis of differentially methylated allelic DNA sequences associated with regulating monoallelic expression of imprinted genes.

G. CONSULTANT APPOINTMENTS:

1. Study Sections for Scientific Grant Reviews

a. NCI Clinical Cancer Program Project Review Subcommittee (ad hoc-1981).
b. Reviewer of contract proposals and grant applications for NIEHS, Research Triangle Park, NC (ad hoc-1982).
c. NCI Chemical Pathology Study Section and NCI Radiation Study Section (ad hoc-1983).
d. External reviewer for the Allegheny-Singer Research Institute (1987).
e. Reviewer of grant applications for the Medical Research Council of Canada (1988).
f. The Israel Academy of Sciences and Humanities (special reviewer-1991).
g. NCI Clinical Sciences Study Section (ad hoc-1991).
h. NCI Metabolic Pathology Study Section Bethesda, MD, (Member, 1993-1996).
i. NASA Site Visit, Ernest Orlando Lawrence Berkeley Nat'l Laboratory, Berkeley, CA, 1996.
j. Veterans Administration Grant Reviewer (ad hoc-1997).
k. Department of Veterans Affairs--Scientific Review Program (ad hoc, 1998-1999).
l. NASA Radiation Health Panel, Ground-Based Research (ad hoc, 1999-2000).
m. NCI Metabolic Pathology Study Section (ad Hoc Member, 2002-2003).
n. National Human Genome Research Institute review committee for grants to establish Centers of Excellence in Genomic Science (CEGS) (Member, 2003).
o. EPA Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory

Panel (FIFRA SAP), (ad hoc member 2003-2004).

p. National Cancer Institute review committee for a McArdle Laboratory Program Project application, Madison, WI (Member, 2004).
q. U.S. Department of Energy (DOE) Low Dose Radiation Biology Meeting, Rockville, MD (External Reviewer, 2004).
r. National Cancer Institute Subcommittee C Meeting, Participant, Bethesda, MD, 2004.
s. National Institute of Health, Laboratory of Mammalian Genes and Development, External Reviewer, Bethesda, MD, 2004.
t. National Institute of Health, Cancer Genetics Study Section, Bethesda, MD, (Ad hoc) 2005.
u. National Institute of Environmental Health Sciences, ONES Review, Research Triangle Park, NC, 2006.
v. NIH Roadmap Epigenomics Review Committee (Chairman), Washington, DC, 2008.

2. Government and Non Profit Agencies

a. NIEHS Promotions and Tenure Committee (ad hoc-1991)
b.. CIIT, Research Triangle Park, NC, Scientific Advisory Panel (1991)
c. EPA & Justice Department, San Francisco, CA (1991 & 1992)
d. US Justice Department, Office of Vaccine Litigation, Washington, DC (2007-2008)
e. NAS Committee, Use of Emerging Science for Environmental Health Decisions, (2009)
f. CUNY School of Public Health, Trans-disciplinary Project, New York, NY, (2011)
g. The Canadian Institute for Advanced Research, Toronto, Canada, (2012)
h. Canadian Institute for Advanced Research's (CIFAR) International Review Body, Toronto, Canada, (2017-2019)

3. Private Companies

a. Burroughs Wellcome, Inc., Research Triangle Park, NC (1992-1995).
b. Genetics Institute, Cambridge, MA (1992-1996).
c. Genentech, Inc., South San Francisco, CA (1994-1996).
d. Battelle, Pacific Northwest National Laboratory, Advisor for the establishment of a molecular toxicology program (1997).
e. Rohm & Haas Company, Spring House, PA (1997-1999).
f. Norvartis, Greensboro, NC (2000). g. Wisconsin Genetics, Inc., Lake Forest, IL (Scientific Advisory Board Member, 1997-2002).
h. Zeneca Pharmaceuticals, Ltd., Macclesfield, Cheshire, UK (1992-2005).
i. MitreTek Systems, Inc., Falls Church, VA (2004-2005).
j. GMR Epigenetics, Inc., Mountain View, CA (Scientific Advisory Board Member, 2003-2006).
k. ScienCentralNews, Inc., New York, NY (2004-2008).
l. Life Sciences Research Office (LSRO) Expert Panel on Nutrigenomics (Member, 2005-2007).
m. Institute for Systems Medicine, Spokane, WA, Scientific Advisory Board (Member, 2006-2007).
n. Syngenta AG, Epigenetics Advisory Board, (Member, 2009-2010).
o. Ono Pharma USA, Inc, Consultant, (2011).

H. PROFESSIONAL AWARDS AND SPECIAL RECOGNITIONS

1. Honors and Endowed Lectureships

a. Szulman Lecture, "Imprinting Evolution: Silence and the Lambs," University of Pittsburgh, Pittsburgh, PA, 2002.
b. NCI Distinguished Seminar Lecture, "Evolution of Imprinted Cancer Susceptibility Genes,", NCI-Fredrick, Fredrick, MD, 2003.
c. Nobel Symposium on Epigenetic Reprogramming in Development and Disease, "Biological Consequences of the Divergent Evolution of *M6P/IGF2R* Imprinting," Stockholm, Sweden, 2004.
d. Fetterman Endowed Lecture, "Epigenetic Basis of Human Health and Disease," University of Pittsburgh, Pittsburgh, PA, 2006.

e. 20th Annual Roland D. Pinkham Basic Science Lectureship, Epigenetics: One Step above the Genome, "Environmental/Dietary Influences on Gene Imprinting and Consequences for Enhanced Disease Susceptibility," Seattle, WA, 2006.
f. Distinguished Achievement Award, College of Engineering, University of Wisconsin, Madison, WI, 2006.
g. Robert T. Simpson Endowed Lecture in Molecular Medicine, Department of Biochemistry and Molecular Biology, "Epigenetics in Human Health and Disease," Pennsylvania State University, University Park, PA, 2007.
h. Featured Scientist on *NOVA* and *ScienceNow* Epigenetics Television Programs and *The DNA Files* and The People's Pharmacy NPR programs.
i. *Time Magazine* Person of the Year Nominee., 2007.
j. Esther B. O'Keeffe Charitable Foundation Award Recipient, 2007 & 2008.
k. Epigenetic Medicine Award Recipient, 2008.
l. Renaissance Weekend, Invited Participant, 2009.
m. National Academy of Sciences NRC Standing Committee - *Use of Emerging Science for Environmental Health Decisions,* 2009.
n. Rank Prize Epigenetics Mini-Symposium, "Epigenetics, Imprinting, and Disease Susceptibility," Invited Participant, 2009.
m. American Society for Nutrition Presidential Series Lecture, "Epigenetics in Human Health and Disease," Keynote Lecturer, New Orleans, LA, 2009.
n. Charlotte Promersberger-Johnston Lecture, "Epigenetics: The Ghost in Our Genes," Medical College of Wisconsin, Milwaukee, WI, 2009.
o. STARS Lecture in Nutrition and Cancer, "Epigenetics, Nutrition, and Disease Susceptibility," National Institutes of Health, Washington, DC, 2009.
p. Smithsonian Institute Lecture, "Epigenetics: The Ghost in Our Genes," Washington, DC, 2009.
q. Patrick J.V. and Margaret Corcoran Lecture, "Epigenetics: The Ghost in Our Genes," IU School of Medicine, Evansville, IN, 2009.
r. Aspen Ideas Festival, Invited Participant, Aspen, CO, 2010.
s. Washington Ideas Forum, Invited Participant, Washington, DC, 2010.
t. Society of Toxicology's Continuing Education Speaker Bureau, Invited Member, 2010.
u. Benirschke Lecture, "Epigenetics: How Genes and Environment Interact," Unversity of California – San Diego, San Diego, CA, 2011.
v. *Environmental Health Perspectives (EHP)* Classic Paper of the Year Award, 2011.
w. Nobel Assembly Epigenomics Meeting, "Environmental Epigenomics and the Developmental Origins of Adult Disease," Stockholm, Sweden, 2011.
x. Environmental Defense Fund (EDF) Science Day, Invited Speaker, "Epigenetics 101," Sausalito, CA, 2012.
y. John Lee Pratt Nutrition Seminar, "Epigenetics, Nutrition, and Disease Susceptibility," Virginia Polytechnic Institute and State University, Department of Animal and Poultry Sciences, Blacksburg, VA, 2012.
z. NIH Director's Wednesday Afternoon Lecture Series (WALS), Invited Speaker, "Epigenetics: How Genes and Environment Interact," 2012.
aa. World Science Festival, Invited Participant, "Destiny and DNA: Our Pliable Genome", New York, NY, 2013.
bb. Robert Wood Johnson Foundation Lecture, Invited Speaker, Princeton, NJ
cc. Killam Memorial Lecture, "Epigenetics: How Genes and Environment Interact," Dalhousie University, Halifax, Canada, 2013.
dd. Renaissance Weekend, Invited Participant, Laguna Niguel, CA, 2014.
ee. Jean Andrews Lecture, Invited Speaker, "Epigenetics: How Genes and Environment Interact," University of Texas – Austin, Austin, TX, 2014.
ff. Linus Pauling Award, Functional Institute of Medicine, Federal Way, WA, 2014.

gg. Robert B. Church Lecture in Biotechnology, Invited Speaker, "Epigenetics: How Genes and Environment Interact," University of Calgary, Calgary, Alberta, Canada, 2014.

hh. *ShortCutstv* Documentary, *Beyond Epigenetics*, Video interviewed for program, London, UK, 2016.

ii. The Northern Communities Health Foundation Visiting Professorship Award, University of Adelaide, Robinson Research Institute, Adelaide, Australia, 2018.

jj. Alexander Hollaender Award, Environmental Mutagenesis and Genomics Society, Jacksonville, FL, 2019.

kk. Research and Innovation Leadership Award, Personalized Lifestyle Medicine Institute, Seattle, WA, 2019.

ll. John R. Cameron Lecture, Department of Medical Physics, University of Wisconsin, Madison, WI, 2023

2. International Meetings Organized

a. FASEB Summer research conference on "Neoplastic Transformation of Liver Cells", Copper Mountain, CO, 1988 (Co-chairman).

b. FASEB Summer Research Conference on "Hepatic Regeneration and Carcinogenesis: Molecular and Cellular Pathways, Copper Mountain, CO, 1990 (Co-chairman).

c. FASEB Summer Research Conference on "Hepatic Regeneration and Carcinogenesis: Molecular and Cellular Pathways, Snowmass Village, CO, 1992 (Chairman).

d. Genomic Imprinting Symposium, Durham, NC, 1998 (Chairman).
URL: http://www.geneimprint.com/site/meetings/1998-durham

e. Environmental Epigenomics, Imprinting and Disease Susceptibility, Durham, NC, 2005 (Chairman).
URL: http://www.geneimprint.com/site/meetings/2005-durham.

f. Keystone Meeting, Environmental Epigenomics and Disease Susceptibility, Asheville, NC, 2011 (Chairman).

3. Invited Speaker at National and International Meetings (Selected)

a. Faculty member, Workshop on Liver Cell Culture (sponsored by the American Tissue Culture Association and held at Alton Jones Cell Science Center, Lake Placid, New York), 1981.

b. International meeting on "Cellular Repair of Radiation Damage: Mechanisms and Modifying Agents", Eleventh L. H. Gray Conference, Glasgow, Scotland, July, 1983.

c. Symposium on the "Effect of Heat, Radiation and Pharmacological Agents on Tumor Microcirculation", Chemical modification of tumor blood flow. 34th Annual Meeting of the Radiation Research Society, 1986.

d. NCI symposium on "Regulation of Growth and Differentiation in Normal, Regenerative and Neoplastic Hepatocytes", 1986.

e. FASEB Summer research conference on "Neoplastic Transformation of Liver Cells", Copper Mt, Colorado, 1988.

f. Experimental Radiation Oncology Conference, Oregon State University, Portland, OR, 1989.

g. Symposium on the "Modification of Tumor Blood Flow for Therapeutic Gain". 37th Annual Meeting of the Radiation Research Society, 1989.

h. International Symposium on the "Normal and Neoplastic Growth in Hepatology: Interface Between Basic and Clinical Science, University of Bari, Bari, Italy, 1989.

i. Society of Toxicology. Target Organ Toxicity: Advanced Hepatotoxicity, "Regulation of Hepatocyte Proliferation", Miami Beach, FL. 1990.

j. FASEB Summer Research Conference on "Hepatic Regeneration and Carcinogenesis: Molecular and Cellular Pathways, Copper Mt, Colorado, 1990.

k. Pharmaceutical Manufacturers Association, Cell Proliferative Responses and their Implication in Drug Safety Assessment. "Regulation of Hepatocyte Proliferation", Tampa, FL, 1990.

l. Health & Environmental Sciences Institute 2nd workshop on Mouse Liver Tumors. "The Role of Growth Factors in Liver Tumor Promotion". Washington, D.C., 1990.

m. Symposium on "Cytokines and Growth Factors in Radiation Oncology", 9th ICRR, Toronto, Canada, 1991.
n. NIEHS symposium on the "Molecular Mechanisms of Carcinogenesis in Humans and Rodents", Research Triangle Park, NC, 1991.
o. Health & Environmental Sciences Institute 3rd workshop on Mouse Liver Tumors (Organizer and participant), Washington, D.C., 1991.
p. FASEB Summer Research Conference on “Hepatic Regeneration and Carcinogenesis: Molecular and Cellular Pathways, Snowmass Village, Colorado, 1992 (Chairman).
q. US-Japan Joint Workshop on "Genetic Analysis of Hepatocarcinogenesis", Honolulu, Hawaii, 1992.
r. First United European Gastroenterology Week**.** "The role of TGF-ß and the IGF-II/M6P receptor in liver regeneration and tumor promotion"**.** Athens, Greece, 1992.
s. Radiation Research Society Symposia on Growth Factors and Cytokines**.** "The Role of Growth Factors in the Repair of Normal Tissue Injury", Dallas, TX, 1993.
t. AASLD Single Topic Symposium on Liver Regeneration. "The Role of TGF-ß in Liver Regeneration and Tumor Promotion", Airlie, Virginia, 1993.
u. Gordon Conference: Mechanisms of Toxicity**.** "TGF-ß: Role in Liver Tumor Promotion and Regeneration", Meriden, NH, 1993.
v. Schering Foundation Workshop on Non-Genotoxic Carcinogenesis. "Liver Tumor Promotion and Breast Cancer Chemoprevention: Common Mechanisms", Cambridge, England, 1993.
w. EPA Symposia on Carcinogenesis and Human Risk Assessment**.** "Liver Tumor Promotion and Breast Cancer Chemoprevention: Common Mechanisms", RTP, NC, 1993.
x. 7th International Conference on Carcinogenesis and Risk Assessment**.** Liver Tumor Promotion and Breast Cancer Chemoprevention: Common Mechanisms", Austin, TX, 1993.
y. FASEB Summer Research Conference on “Hepatic Regeneration and Carcinogenesis: Molecular and Cellular Pathways”, Copper Mt, Colorado, 1994 (Co-chairman).
z. American Society of Investigative Pathology, Program Committee, 1995-1996.
aa. American Society for Therapeutic Radiology and Oncology, Symposium on Treatment of Intrahepatic Cancers, “Transforming Growth Factor Beta: A Predictor of Normal Tissue Toxicity, Miami, FL, 1995.
bb. FASEB Summer Research Conference on “Cellular and Molecular Mechanism for Liver Growth Regulation”, Snowmass Village, CO, 1996, (Co-chairman).
cc. The British Toxicology Society Annual Meeting on “Tumor suppressor gene imprinting and risk assessment”, Brighton, UK, 1996.
dd. Chinese Society for Therapeutic Radiology and Oncology, R.O.C. Annual Meeting on “M6P/IGF2 receptor: a newly identified liver tumor suppressor gene” and “Transforming growth factor-beta: predictor of radiation-induced normal tissue damage”, Taipei, Taiwan, 1997.
ee. Cold Spring Harbor Laboratory Meeting on “The Regulation of Liver Gene Expression in Health and Disease”, Cold Spring Harbor, NY, 1997.
ff. 79th Annual Meeting of The Endocrine Society, Minneapolis, MN, 1997.
gg. Society of Toxicology Workshop on “Mouse Liver Tumors”, Chapel Hill, NC, 1997.
hh. Falk Workshop on “Normal and Malignant Liver Cell Growth”, Halle, Germany, 1998.
ii. University of Manchester, Division of Biological Sciences Seminar Series, “Genomic Imprinting and Disease Susceptibility”, Manchester, UK, 1998.
jj. Radiation Research Society Meeting course on “Concepts in Carcinogenesis: Role of Imprinted Genes”, Louisville, KY, 1998.
kk. CASL Conference on Hepatocellular Carcinoma: Science and Practice, Niagara-on-the-Lake, Canada, 1998.
ll. FASEB Summer Research Conference on “Mechanisms of Liver Growth and Differentiation in Health and Disease”, Snowmass Village, CO, 1998.
mm. 28th Annual European Environmental Mutagen Society Meeting, Salzburg, Austria, 1998.

nn. Duke University/NIEHS Joint Symposium on “Genomic Imprinting and Disease Susceptibility”, Durham, NC, 1998 (Chairman and Organizer).
oo. NIEHS Annual Leadership Retreat, Pine Hurst, NC, 1999.
pp. International Genomic Imprinting Symposium, “*M6P/IGF2R*: An Imprinted Tumor Suppressor”, Dublin, Ireland, 1999.
qq. EUROTOX 2000 Meeting, “*M6P/IGF2R* Imprinting Evolution and Cancer”, London, UK, 2000.
rr. International Genomic Imprinting Symposium, “Evolution and Regulation of Imprinted Genes”, Osaka, Japan, 2001.
ss. SNPs & Pharmacogenomics Conference; “Using SNPs to Study the Evolution and Regulation of Imprinted Genes”, Philadelphia, PA, (Chairman), 2001.
tt. FASEB Summer Research Conference on Growth Factor, Receptor Tyrosine Kinases in Mitogenesis, Morphogenesis and Tumorigenesis, “Imprinting in Growth and Anti-Growth”, Snowmass Village, CO, 2001.
uu. AACR Symposium on Molecular Aspects of GI Cancers, “Genomic Imprinting Evolution and Cancer Susceptibility”, Seoul, Korea, 2001.
vv. Society for Women's Health Research symposium on Sex Begins in the Womb, “Biological Consequences of Imprinting Evolution”, Palo Alto, CA, 2002.
ww. NIEHS US-Japan Panel Environmental Mutagenesis and Carcinogenesis Meeting, Kauai, Hawaii, 2002.
xx. Imprinting and Growth Congress 2002, “Evolution of Imprinted Growth Regulatory Genes”, London, UK, 2002.
yy. NIH Epigenetic Mechanisms in Human Disease Meeting, “Biological Consequences of Imprinting Evolution”, Washington, D.C., 2002.
zz. FASEB Summer research Conference on Mechanisms of Liver Growth, Differentiation & Molecular Pathogenesis of Hepatic Diseases, "Evolution of Imprinted Liver Cancer Susceptibility Genes", Snowmass Village, CO, 2002.
aaa. American Society of Preventive Oncology Meeting, "Imprinted Genes: Epigenetic Cancer Susceptibility Loci Modified by Early Nutrition", Philadelphia, PA, 2003.
bbb. Environmental Mutagen Society Colon Cancer Meeting, "The Impact of the Environment on Colon Cancer," Loss of Imprinting and Cancer Susceptibility: The Good News and The Bad News,” Miami Beach, FI, 2003.
ccc. Aspen Cancer Conference, "Evolution of Imprinted Cancer Susceptibility Genes", Aspen, CO, 2003.
ddd. German Genetics Society Epigenetics Conference, “Transposons and Imprinted Genes: Early Nutrition and Chronic Disease Susceptibility”, Kassel, Germany, 2003.
eee. XII Congress on Gestational Trophoblastic Disease, "Evolution of Imprinted Tumor Susceptibility Genes", Boston, MA, 2003.
fff. 2004 European Society of Human Genetics on epigenetics, "Imprinted Genes and Transposons: Epigenomic Targets Linking Fetal Nutrition with Adult Disease Susceptibility," Munich, Germany, 2004.
ggg. Frontiers in Human Embryonic Stem Cell Course/Symposium, “Evolution of Imprinted Disease Susceptibility Genes,” Pittsburgh, PA, 2004.
hhh. Longevity Consortium Symposium, "Imprinted Genes and Transposons: Epigenomic Targets Linking Fetal Nutrition with Adult Disease Susceptibility," New York, NY, 2004.
iii. 3rd Annual Meeting of the International Society of Pharmacogenomics “From Human Genetic Variations to Prediction of Risks and Responses to the Environment,” "Imprinted Genes and Transposons: Epigenomic Targets Linking Fetal Nutrition with Adult Disease Susceptibility," Santorini Island, Greece, 2004.
jjj. Sixth Annual Conference on Sex and Gene Expression (SAGE VI), "Imprinted Genes and Transposons: Epigenomic Targets Linking Fetal Nutrition with Adult Disease Susceptibility," Winston-Salem, NC, 2005.
kkk. Bovine Genome Project: The Next Phase International Workshop. Panel member of session entitled "The Interface with the Biomedical Community: What are the Opportunities?", Houston, TX, 2005.
lll. American Society of Nutrition Meeting, Presidential Series Keynote Address, 2009.
mmm. Rank Prize Epigenetics Mini-Symposium, “Epigenetics, Imprinting, and Disease Susceptibility,” Bowness, UK, 2009.

nnn. Biomedica Meeting, Keynote Speaker, “Environmental Epigenomics and Disease Susceptibility,” Aachen, Germany, 2010.
ooo. International Society for Animal Genetics, Keynote Speaker, “Epigenetics, Imprinting, and Disease Susceptibility,”, Edinburgh, Scotland, 2010.
ppp. Nestle’s 7th International Nutrition Symposium, “Epigenetics, Nutrition and Disease Susceptibility,” Lausanne, Switzerland, 2010.
qqq. Man in Extreme Environments Meeting, “Effect of Nutrient and Toxicological Environments on the Epigenome,” Trondheim, Norway, 2010.
rrr. Keystone Environmental Epigenomics and Disease Susceptibility Meeting, “Evolution of Genomic Imprinting,” Asheville, NC, 2011.
sss. Nobel Assembly Pharmacogenomics and Epigenomics in Clinical Medicine Meeting, “Environment and Epigenomic Alterations,” Stockholm, Sweden, 2011.
ttt. Linus Pauling Award, Functional Institute of Medicine Meeting, “Epigenetics: How Genes and Environment Interact,” San Francisco, CA, 2014
uuu. Robert B. Church Lecture in Biotechnology, Invited Speaker, “Epigenetics: How Genes and Environment Interact,” University of Calgary, Calgary, Alberta, Canada, 2014.
vvv. Alexander Hollaender Award Lecture, Invited Speaker, “Epigenetics in Human Health and Disease,” Environmental Mutagenesis and Genomics Society, Washington, DC, 2019.
www. Cameron Lecture, Invited Speaker, " Epigenetics and the Fetal Origins of Health and Disease." Department of Medical Physics, University of Wisconsin, Madison, WI, 2023

4. Invited Seminars

1977
a. Stanford University, Department of Radiology, Stanford, CA
b. University of New Mexico, Cancer Research and Treatment Center, Albuquerque, NM
c. Mayo Clinic, Department of Therapeutic Radiology, Rochester, MN
d. Duke University, Department of Radiology, Durham, NC

1979
a. The University of Wisconsin-Madison, Department of Zoology, Madison, WI
b. The Johns Hopkins Oncology Center, Division of Radiobiology, Baltimore, MD

1981
a. The University of Wisconsin-Madison, Department of Human Oncology, Madison, WI

1982
a. McGill University, Department of Pharmacology and Therapeutics, Montreal, Canada
b. ENEA-C.R.E., Casaccia, Roma, Italia, Department of Pathology, Rome, Italy

1983
a. The University of Texas System Cancer Center, M.D. Anderson Hospital and Tumor Institute, Department of Therapeutic Radiology, Houston, TX
b. Northwestern University, Department of Pathology, Chicago, IL
c. Duke University, Cancer Center Seminar Series, Durham, NC
d. University of North Carolina, Department of Pathology, Chapel Hill, NC

1984
a. Lovelace Biomedical and Environmental Research Institute, Albuquerque, New Mexico
b. ENEA-C.R.E., Casaccia, Roma, Italia, Department of Pathology, Rome, Italy
c. Duke University, Gastroenterology Seminar Series, Durham, NC

1986
a. National Institute of Health Conference on Regulation of Growth and Differentiation in Normal, Regenerative and Neoplastic Hepatocytes, Bethesda, MD

1987
a. British Columbia Cancer Research Centre, Vancouver, B.C., Canada

b. University of Washington, Radiation Oncology Dept., Seattle, WA
c. University of Wisconsin Department of Human Oncology, Madison, WI
d. Wake Forest University, Winston-Salem, NC
e. Yale University, New Haven, CT
f. US EPA, Chicago, IL

1988

a. Duke University, Department of Medicine, Division of Gastroenterology, Durham, NC
b. FASEB Summer Research Conference on Neoplastic Transformation of Liver Cells, Copper Mountain, CO

1989

a. University of North Carolina, Department of Pathology, Chapel Hill, NC
b. Oregon State University, Portland, OR
c. Fred Hutchinson Cancer Center, Seattle, WA
d. Normal and Neoplastic Growth in Hepatology: Interface between Basic and Clinical Science, Bari, Italy
e. Institute of Pathology, Munich, Germany
f. University of Salzburg, Department of Genetics, Salzburg, Austria
g. Institut fur Tumorbiologie-Krebsforschung, Vienna, Austria
h. University of Toronto, Toronto, Canada
i. National Symposium on Water Quality Assessment, Ft. Collins, CO

1990

a. University of Wisconsin-Madison, Madison, WI
b. Continuing Education Course in: Target Toxicity: Advance Hepatotoxicity, SOT, Miami Beach, FL
c. FASEB Summer Research Conference on Hepatic Regeneration and Carcinogenesis, Copper Mountain, CO
d. PMA Meeting on Cell Proliferative Responses and their Implications in Drug Safety Assessment, Tampa, FL
e. 2nd ILSI Workshop on Mouse Liver Tumors, Washington, DC

1991

a. Procter and Gambles, Inc., Cincinnati, OH
b. 9th ICRR meeting, Toronto, Canada
c. University of Pittsburgh, Pittsburgh, PA
d. NIEHS, Seminars in Receptor Mechanisms, Research Triangle Park, NC
e. NIEHS, Symposium on "Molecular Mechanisms of Carcinogenesis in Humans and Rodents, Research Triangle Park, NC
f. 3rd ILSI Workshop on Mouse Liver Tumors, Washington, DC
g. University of North Carolina, Chapel Hill, NC

1992

a. US-Japan Joint Workshop on Liver Carcinogenesis, Honolulu, Hawaii
b. Hoffmann-LaRoche, Nutley, NJ
c. FASEB Summer Research Conference on “Hepatic Regeneration and Carcinogenesis, Snowmass Village, CO
d. International Gastroenterology Meeting, Athens, Greece
e. Genetics Institute, Cambridge, MA
f. Late Effects Workshop, San Francisco, CA
g. ILSI Meeting on Mouse Liver Tumors, Washington, DC

1993

a. Michigan State University, E. Lansing, MI
b. University of North Carolina, Chapel Hill, NC
c. Zeneca Pharmaceuticals, Ltd, Macclesfield, UK
d. Cambridge University, Cambridge, UK
e. MD Anderson, Austin, TX

1994

a. Albert Einstein College of Medicine, Bronx, NY
b. NC Society of Radiologic Technologists, Research Triangle Park, NC
c. 4th ILSI Workshop on Mouse Liver Tumors, Washington, DC
d. Hoffmann-La Roche, Nutley, NJ
e. FASEB Summer Research Conference, Copper Mt, CO
f. Nexagen, Boulder, CO

g. Medical College of Virginia, Richmond, VA

1995

a. Genzyme, Boston, MA
b. Zeneca Pharmaceuticals, Ltd, Macclesfield, UK
c. University of Leicester (MRC Toxicology), Leicester, England
d. Rutger University (New Jersey Cancer Institute), New Brunswick, NJ
e. University of Pittsburgh, Pittsburgh, PA
f. Procter & Gamble, Cincinnati, OH

1996

a. Procter & Gamble, Cincinnati, OH
b. 21st Meeting of the International Association for Breast Cancer Research, Paris, France
c. FASEB Summer Research Conference on Cellular and Molecular Mechanisms for Liver Growth Regulation, Snowmass, CO
d. Autumn Meeting of The British Toxicology Society, Brighton, UK
e. Zeneca Pharmaceuticals, Ltd, Macclesfield, UK
f. Rohm & Haas, Spring House, PA

1997

a. Chinese Society for Therapeutic Radiology and Oncology, Taipei, Taiwan
b. Sun Yet-Sen Cancer Center, Taipei, Taiwan
c. National Taiwan University Medical Center, Taipei, Taiwan
d. The Cancer Institute, Tokyo, Japan
e. Sumitomo Chemical, Osaka, Japan
f. Albert Einstein College of Medicine, Bronx NY
g. Ernest Orlando Lawrence Berkeley National Laboratory, Berkeley, CA
h. Cold Spring Harbor Laboratory Meeting on Regulation of Liver Gene Expression in Health and Disease, Cold Spring Harbor, NY
i. Brown University, Providence, RI
j. The Endocrine Society, Minneapolis, MN
k. SOT Mouse Liver Tumor Workshop, Chapel Hill, NC
l. Zeneca Pharmaceuticals, Ltd, Macclesfield, UK

1998

a. Falk Workshop on Normal and Malignant Liver Cell Growth, Halle, Germany
b. University of Pittsburgh, Pittsburgh, PA
c. Zeneca Pharmaceuticals, Ltd, Macclesfield, UK
d. University of Manchester, Manchester, UK
e. CASL Conference on Hepatocellular Carcinoma: Science and Practice, Niagara-on-the-Lake, Canada
f. FASEB Summer Research Conference on Liver Growth and Differentiation in Health and Disease, Snowmass, CO
g. European Environmental Mutagen Society Meeting, Salzburg, Austria
h. Zeneca Pharmaceuticals, Ltd, Wilmington, DL
i. Rohm & Haas, Spring House, PA
j. University of North Carolina-Chapel Hill, Chapel Hill, NC

1999

a. NIEHS, Annual Leadership Retreat, Pine Hurst, NC
b. Tufts University, Boston, MA
c. Sigma Xi Lecture, Research Triangle Park, NC
d. Genomic Imprinting Symposium, Dublin, Ireland

2000

a. Dupont Pharmaceuticals, Inc. Philadelphia, PA
b. Parke-Davis Pharmaceuticals, Inc. Ann Arbor, MI
c. East Carolina University, Greenville, NC
d. EUROTOX 2000 Meeting, London, UK
e. NCI Modifying Normal Tissue Damage Post-irradiation Workshop, Washington, D.C.
f. Medical College of Wisconsin, Milwaukee, WI
g. LabCorp, Inc. Research Triangle Park, NC

2001

a. National Institutes of Health AAV Safety Symposium, Washington, D.C.
b. University of Wisconsin-Madison, Madison, WI

c. NIEHS, NIH, Research Triangle Park, NC
d. U.S. Meat Animal Research Center, Clay Center, NE
e. University College Dublin, UCD, Dublin, Ireland
f. FASEB Summer Research Conference, Snowmass Village, CO
g. AACR Symposium, Molecular Aspects of GI Cancers, Seoul, Korea

2002

a. Society for Women's Health Research Symposium, Palo Alto, CA, 2002
b. NIEHS US-Japan Panel Environmental Mutagenesis and Carcinogenesis Meeting, Kauai, Hawaii, 2002
c. Imprinting and Growth Congress 2002, London, UK, 2002
d. NIH Epigenetic Mechanisms in Human Disease Meeting, Washington, D.C., 2002
e. FASEB Summer research Conference on Mechanisms of Liver Growth, Differentiation & Molecular Pathogenesis of Hepatic Diseases, Snowmass Village, CO, 2002
f. Szulman Lecture, University of Pittsburgh, Pittsburgh, PA
g. CIIT Centers for Health Research, Research Triangle Park, NC

2003

a. Duke Comprehensive Cancer Center's Therapeutics Development Group, Durham, NC
b. American Society of Preventive Oncology Meeting, Philadelphia, PA
c. Medicine Grand Rounds, Duke University Medical Center, Durham, NC
d. Toxicology Seminar, Duke University, Durham, NC
e. Distinguished Seminar Series, NCI-Fredrick, Fredrick, MD
f. Environmental Mutagen Society, Miami, FL
g. Aspen Cancer Conference, Aspen, CO
h. German Genetics Society Meeting, Kässel, Germany
i. XIIth World Congress on Gestational Trophoblastic Disease, Boston, MA
j. University of Vermont, Burlington, VT

2004

a. Biology, Anthropology and Anatomy Department Seminar, Duke University, Durham, NC
b. Biomedical Engineering Seminar, Duke University, Durham, NC
c. Cancer Control Seminar, Duke University Medical Center, Durham, NC
b. Molecular Carcinogenesis Divisions Seminar, NIEHS, Research Triangle Park, NC
e. Toxicology Meeting on Obesity: Developmental Origins and Environmental Influences, Duke University/NIEHS, Durham, NC
f. NIEHS/ACC Meeting on Developmental Toxicology and Fetal Basis of Adult Disease, Research Triangle Park, NC
g. European Society of Human Genetics Meeting, Munich, Germany
h. Frontiers in Human Embryonic Stem Symposium, Pittsburgh, PA
i. 2004 Nobel Symposium on Epigenetic Reprogramming in Development and Disease, Stockholm, Sweden
j. 2004 Pediatric Academic Societies' Annual Meeting on Epigenetics and its Role in Programming Symposium, San Francisco, CA
k. Neonatal-Perinatal Research Institute, Duke University Medical Center, Durham, NC
l. International Society of Pharmacogenomics Santorini Conference on From Human Genetic Variations to Prediction of Risks and Responses to the Environment, Santorini Island, Greece
m. Liver Genetics and Development Symposium, UCSF Liver Center, San Francisco, CA
n. American Diabetes Association's 64th Scientific Meeting on DNA Methylation and Regulation of Body Fat, Orlando, FL
o. Longevity Consortium Symposium, New York, NY
p. NIH Seminar, Department of Pathology, Bethesda, MD
q. Toxicology Seminar, North Carolina State University, Environmental and Molecular Toxicology Department, Raleigh, NC.
r. Department of Pathology Seminar, Duke University Medical Center, Durham, NC
s. GEMS Meeting on DNA Methylation and its Toxicological Consequences, Chapel

Hill, NC
t. USDA Human Nutrition Research Center, Tufts University, Boston, MA
u. Therapeutics Development Working Group Meeting, Duke University, Durham, NC

2005

a. Sixth Annual Conference on Sex and Gene Expression (SAGE VI), Winston-Salem, NC
b. Joint Breast Ovarian Cancer Meeting, Duke University, Durham, NC
c. Life Sciences Research Office (LSRO) Nutrigenomics Think Tank, Bethesda, MD
d. Bovine Genome Project: The Next Phase International Workshop, Houston, TX
e. Therapeutics Development Working Group Meeting, Duke University, Durham, NC
f. Brookdale Department of Molecular, Cell & Developmental Biology, Mount Sinai School of Medicine, New York, NY
g. Low Dose Workshop, Department of Energy, Washington, DC
h. 7th annual Symposium on the Environment and Hormones, Center for Bioenvironmental Research at Tulane and Xavier Universities, New Orleans. LA
i. 36th Annual Meeting of the Environmental Mutagen Society, San Francisco, CA
j. Department of Endocrinology, Grand Rounds, Duke University, Durham, NC
k. Department of Nutrition, Nutritional Biochemistry Seminar, University of North Carolina-Chapel Hill , Chapel Hill, NC
l. Duke/NIEHS Environmental Epigenomics Conference, Durham, NC

2006

a. Joslin Diabetes Center Seminar, Boston, MA
b. National Academy of Sciences-Toxicogenomics Meeting, Washington, DC
c. Epigenetics Symposium, Society of Toxicology, San Diego, CA
d. Epidemiology Scientific Symposium, Children's Oncology Group Meeting, Chicago, IL
e. Molecular Biology Interdisciplinary Graduate Program, University of Iowa, Iowa City, IA
f. Institute of Cancer Genetics Seminar Series, Columbia-Presbyterian Medical Center, New York, NY
g. Epigenetics in Biology and Disease Symposium, Fred Hutchinson Cancer Research Center, Seattle, WA
h. Fetterman Endowed Lecturer, University of Pittsburgh, Pittsburgh, PA
i. NIH Neuroscience and Neuropsychology of Aging Workshop, Washington, DC
j. Salzburg Biosemiotics Meeting, Salzburg, Austria
k. Conference on Nutrition and Cancer, American Institute for Cancer Research, Washington, DC
l. Department of Radiation Oncology, Medical College of Virginia, Richmond, VA
m. Gene-environment Interactions and the Developmental Origins of Health and Disease, UC Irvine, Irvine, CA
n. Department of Food Science and Human Nutrition Seminar, University of Illinois at Urbana-Champaign, Champaign, IL
o. University of Minnesota Cancer Center, Minneapolis, MN
p. Epigenetics in Obesity Symposium, NAASO, The Obesity Society Meeting, Boston, MA
q. Epigenomics and Imprinting Session, AACR Conference on Frontiers in Cancer Prevention Research, Boston, MA
r. Pinkham Conference on Basic Science Lectureship, Seattle, WA

2007

a. ILSI-HESI Annual Meeting on Emerging Issues: Understanding the Importance of Transgenerational Inheritance of Epigenetic Changes, Cancun, Mexico
b. Keystone Symposia on Reproduction: Advances and Challenges, Santa Fe, NM
c. LSRO Nutrigenomics Meeting on Emerging Issues in Science: Inflammation and Obesity, Bethesda, MD
d. Duke University, Nicholas School of the Environment, Durham, NC
e. Robert T. Simpson Endowed Lecture in Molecular Medicine, Pennsylvania State University, University Park, PA
f. NIH Epigenetics Roadmap Workshop, Bethesda, MD
g. University of Zürich Toxicology Seminar, Zürich, Switzerland

h. University of Lausanne Toxicology Seminar, Lausanne, Switzerland
i. Linus Pauling Institute and the Oxygen Club of California, Diet and Optimum Health Conference, Portland, OR
j. University of Vienna and Austrian Scientists for Nature Protection, Epigenetics Symposium, Vienna, Austria
k. University of Salzburg Seminar, Salzburg, Austria
l. 4th International Conference on the Female Reproductive Tract, Kloster Frauenwörth, Frauenchiemsee, Germany
m. 13th International Congress of Radiation Research, Topical Reviews Program, San Francisco, CA
n. The Jackson Laboratory Seminar, Bar Harbor, ME
o. Toxicogenomics Integrated with Environmental Sciences Conference, NC State University, Raleigh, NC
p. OLLI at Duke Seminar, Forest at Duke Retirement Community, Durham, NC
q. 38th Annual Environmental Mutagenesis Society meeting, Topical Review, Atlanta, GA
r. 20th Anniversary Superfund Basic Research Program Meeting, Durham, NC
s. DOE BER's Advisory Committee Review, Washington, DC

2008

a. CEHS Seminar Series presentation at the University of North Carolina, Chapel Hill, NC
b. Epigenetics & Law Seminar, Panel Participant at Duke University, Durham, NC
c. Fetal Physiology Foundation Symposium, Johns Hopkins University, Baltimore, MD
d. Multidisciplinary Workshop on Nutrition, Brain Development and Aging: Genetics, Epigenetics and Behavior, UNC-Chapel Hill, Kannapolis, NC
e. National Scientific Council on the Developing Child at Harvard Meeting, Washington, DC
f. Mount Desert Island Stem Cell Symposium, Salisbury Cove, ME
g. Collins Lecture, Massachusetts General Hospital, Harvard University, Boston, MA
h. Massachusetts General Hospital Center for Cancer Research seminar, Harvard University, Boston, MA
i. Department of Environmental and Occupational Health Seminar, University of Pittsburgh, Pittsburgh, PA
j. Center for Environmental Oncology Seminar, University of Pittsburgh Cancer Institute, Pittsburgh, PA
k. Center for Drug Evaluation and Research (CDER) Seminar, U.S. Food and Drug Administration (FDA), Washington, DC
l. MD Anderson Cancer Center Seminar, Houston, TX
m. NC State Toxicology Seminar, North Carolina State University, Raleigh, NC
n. Endocrinology, Health and the Environment seminar series, Rutgers University, New Brunswick, NJ
o. Mountain Sky Guest Ranch Meeting, Emigrant, MT
p. UNC-Chapel Hill Department of Cell and Molecular Physiology Seminar, Chapel Hill, NC
q. EPA Science Advisory Board meeting, Washington, DC
r. GI Grand Rounds, Duke University, Durham, NC
s. Harvard School of Public Health Distinguished Lecture Series, Boston, MA
t. National Cancer Institute, FCRDC seminar, Fredrick, MD
u NCI Invited Speaker Series, Washington, DC
v. NIH Workshop, Dynamic Epigenome and Homeostatic Regulations in Health and Disease, Bethesda, MD

2009

a. Gordon Research Conference, Cancer Genetics and Epigenetics, Ventura Beach, CA
b. Renaissance Weekend, Tucson, AZ
c. University of Arizona, Department of Pharmacology and Toxicology, Tucson, AZ
d. University of Arizona, The BIO5 Institute, Tucson, AZ

e. Johns Hopkins University, Department of Environmental Health Sciences, Baltimore, MD
f. University of Minnesota, Division of Pediatric Epidemiology & Clinical Research, Department of Pediatrics, Minneapolis, MN
g. Angiomyogenesis and Cell Therapy Symposium, Washington, DC
h. Society of Toxicology, Baltimore, MD
i. Campbell University, Walker Biology Club, Buies Creek, NC
k. Human Biology Association Meeting, Chicago, IL
l. MD Anderson Cancer Center's Symposium on Cancer Research, Cellular Energy, Metabolism and Cancer, Houston, TX
m. University of Florida, Department of Biochemistry & Molecular Biology, the Center for Epigenetics, and College of Medicine, Gainesville, FL
n. American Society of Nutrition Meeting, Presidential Series Keynote Address, New Orleans, LA
o. East Carolina University Seminar, Epigenetics in Human Health and Disease, Greenville, NC
p. Rank Prize Epigenetics Mini-Symposium, Epigenetics, Imprinting, and Disease Susceptibility, Bowness, UK
q. University of Rochester, Department of Environmental Medicine, Rochester, NY.
r. Dartmouth University, Departments of Medicine and Pharmacology & Toxicology, Lebanon, NH
s. American Diabetes Association Meeting, Plenary Presentation, New Orleans, LA
t. Fetal Alcohol Spectrum Disorder Study Group Meeting, Keynote Preentation, San Diego, CA
u. University of Wisconsin-Madison, Biomedical Engineering, Madison, WI
v. University of Nebraska, Department of Nutrition and Health Sciences Lincoln, NE
w. National Institutes of Health, Division of Cancer Prevention, Stars in Nutrition and Cancer Lecturer, Bethesda, MD
x. Smithsonian Lecture Program, Bethesda, MD
y. Indiana University School of Medicine, Corcoran Lectureship, Evansville, IN

2010

a. International Human Epigenome Consortium Meeting, Invited Participant, Paris, France
b. Society of Toxicology Meeting, CME course Gene-Environment Interactions, Invited Speaker, Salt Lake City, UT
c. Biomedica Meeting, Keynote Speaker, Aachen, Germany
d. University of Liège, School of Veterinary Medicine, Liège, Beligium
e. University of Michigan, School of Public Health, Ann Arbor, MI
f. Columbia University, Epigenetics and Human Health Course, New York, NY
g. HHMI Environmental Health and Safety Conference, Keynote Speaker, Janelia Farm Research Campus, Ashburn, VA
h. Low Dose Radiation Research Program Workshop, Washington, DC
i. University of Utah, Department of Pathology, Salt Lake City, UT
j. University of Wisconsin-Madison, School of Medicine, Madison, WI
k. Society for Prevention Research Meeting, Keynote Speaker, Denver, CO
l. National Institute of Aging Workshop, Keynote Speaker, Washington, DC
k. Annual Green Chemistry & Engineering Conference, Invited Speaker, Washington, DC
l. Aspen Ideas Festival, Invited Participant, Aspen, CO
m. International Society for Animal Genetics, Keynote Speaker, Edinburgh, Scotland
n. David W. Smith Workshop on on Malformations and Morphogenesis, Keynote Speaker, Union, WA
o. Genetic Toxicology Association Meeting, Invited Speaker, Newark, DE

p. University of Nebraska, Institute of Agriculture and Natural Resources, Lincoln, NE
q. Washington Ideas Forum, Invited Participant, Washington, DC
r. NESCent Evolution Workshop, Invited Speaker, Durham, NC
s. Southeastern Society of Toxicology Meeting, Keynote Speaker, Athens, GA
t. Jus International Conference, Keynote Speaker, Salt Lake City, UT
u. e.hormone Meeting, Invited Speaker, New Orleans, LA
v. Nestlé's 7th International Nutrition Symposium, Invited Speaker, Lausanne, Switzerland
w. Mid-Atlantic Society of Toxicology, Keynote Speaker, Newark, NJ
x. NIH Eating Disorders Meeting, Invited Speaker, Greenbelt, MD
y. Man in Extreme Environments Meeting, Invited Speaker, Trondheim, Norway

2011

a. USC Annenberg School for Communication & Journalism, Keynote Speaker, Alhambra, CA
b. USC School of Public Health, Invited Speaker, Alhambra, CA
c. Pediatric Grand Rounds, Moses Cone Hospital, Invited Speaker, Greensboro, NC
d. University of Missouri, Invited Speaker, Columbia, MO
e. Keystone Environmental Epigenomics and Disease Susceptibility Meeting, Organizer and Speaker, Asheville, NC
f. Emory University, Rollins School of Public Health, Invited Speaker, Atlanta, GA
g. Epigentics World Congress, Keynote Speaker, Boston, MA
h. Canadian Human Genetics Meeting, Keynote Speaker, Banff, Alberta, Canada
i. Nobel Assembly Epigenetics Symposium, Invited Speaker, Stockholm, Sweden
j. Benirschke Lecture, University of California – San Diego, Invited Speaker, San Diego, CA
k. University of Pittsburgh, Department of Pathology, Invited Speaker, Pittsburgh, PA
l. University of North Carolina – Chapel Hill, Grand Rounds, Department of Pediatrics, Invited Speaker, Chapel Hill, NC
m. University of Louisville, Departmen of Biochemistry & Molecular Biology, Invited Speaker, Louisville, KY
n. Texas A&M University, Department of Veterinary Integrative Biosciences, College Station, TX
o. NLSOT Meeting, Keynote Speaker, Duluth, MN
p. NY Academy of Sciences Meeting, Invited Speaker, New York, NY
q. The University of Texas Health Science Center, Departments of Cellular & Structural Biology and Pharmacology, Invited Speaker, San Antonio, TX
r. Harvard/MGH Center on Genomics, Vulnerable Populations, and Health Disparities, Gene-Environment Interactions inObesity Research: Complex Pathways to Health Disparities Workshop, Invited Speaker, Boston, MA
s. CUNY Trans-disciplinary Workshop, Invited Speaker, New York, NY
t. NESCENT Evolutionary Biology Meeting, Invited Speaker, Durham, NC

2012

a. Environmental Defense Fund (EDF), Science Day Meeting, Invited Speaker, Sausalito, CA
b. University of North Carolina-Chapel Hill, Nutrition Research Institute, Invited Speaker, Chapel Hill, NC
c. John Lee Pratt Nutrition Seminar, Virginia Polytechnic Institute and State University, Department of Animal and Poultry Sciences, Invited Speaker, Blacksburg, VA
d. University of Toronto, Grand Rounds, Departments of Pediatrics and Genetics,

Invited Speaker, Toronto, Canada

e. AACR Annual Meeting, Educational Epigenetics Session, Invited Speaker, Chicago, IL
f. NIH Wednesday Afternoon Lecture Series (WALS), Invited Speaker, Washington, DC
g. Research Triangle Institute Conference, Invited Speaker, Research Triangle Park, NC
h. University of Rhode Island, Department of Biomedical and Pharmaceutical Sciences, Invited Speaker, Kingston, RI
i. Ohio State University, Russell Klein Symposium, Keynote Speaker, Columbus, OH
j. University of Cincinnati, Department of Environmental Health, Center for Environmental Genetics symposium, Keynote Speaker, Cincinnati, OH
k. Renaissance Technologies Colloquium, Invited Speaker, Stony Brook, NY
l. Stony Brook University, Stony Brook Cancer Center, Invited Speaker, Stony Brook, NY
m. EMS Meeting, Next Generation Environmental Epigenetics Symposium, Invited Speaker, Bellevue, WA
n. Iowa State University, Interdepartmental Genetics (IG) Workshop on Epigenetics, Keynote Speaker, Ames, IA
o. University of Bedfordshire, Department of Sport and Exercise Sciences, Invited Speaker, Bedford, UK

2013

a. NC State University, Department of Biology, Invited Speaker, Raleigh, NC
b. Duke University, Department of Anesthesiology, Grand Rounds, Durham, NC
c. University of Maryland, Department of Radiation Oncology, Invited Speaker, Baltimore, MD
d. Lovelace Respiratory Research Institute, Immunology Division, Invited Speaker, Albuquerque, NM
e. Duke University, Duke Toxicology Epigenetics Symposium, Keynote Speaker, Durham, NC
f. Texas A&M, Department of Animal Science, Invited Speaker, College Station, TX
g. Smithsonian Associates Seminar Series, Evening Seminar Speaker, Washington, DC
h. University of Massachusetts at Amherst, 12th International Dose-Response Conference, Amherst, MA
i. World Science Festival, Invited Participant, New York, NY
j. EUROTOX Meeting, Invited Symposium Speaker, Interlaken, Switzerland
k. Robert Wood Johnson Foundation Lecture, Invited Speaker, Princeton, NJ
l. 25th International IGB Workshop, Invited Speaker, Capri Island, Italy
m. Dalhousie University, Killam Memorial Lecture, Invited Speaker, Halifax, Canada
n. ACVP Epigenetics Symposium, Invited Participant, Montreal, Canada

2014

a. Duke University Medical Center, Invited Speaker, Durham, NC
b. University of Texas – Austin, Jean Andrews Lecture, Invited Speaker, Austin, TX
c. University of California - Los Angeles, National Bureau of Economic Research Cohort Studies Meeting, Invited Speaker, Los Angeles, CA
d. Johns Hopkins University Medical Center, Invited Speaker, Baltimore, MD
e. Institute for Functional Medicine 2014 Annual International Conference, Invited Speaker, San Francisco, CA
f. University of Calgary, Robert B. Church Lecture in Biotechnology, Invited Speaker, Calgary, Alberta, Canada

g. West Virginia University, Invited Speaker, Morgantown, WV
h. Rat Genomics and Models Meeting, Invited Participant, Wellcome Trust Sanger Institute, Hinxton, UK

2015

a. The Reversal of Chronic Diseases, Retina Specialty Institute, Invited Participant, Orlando, FL
b. University of Iowa, Invited Speaker, Iowa City, IA

2016

a. The Fox Chase Cancer Center, Distinguished Lecture Series Seminar, Invited Speaker, Philadelphia, PA

2017

a. Reactive Oxygen Species and Lipid Peroxidation in Human Health and in Disease meeting, Invited Participant, Graz, Austria
b. Biological Performance/Resilience Workshop, Invited Participant, University of Massachusetts, Amherst, MA

2018

a. ASPEN18 Epigenetics Workshop, Invited Speaker, Las Vegas, NV
b. ASPEN18 Epigenetics Meeting, Invited Speaker, Las Vegas, NV
c. The University of Adelaide, Robinson Research Institute and School of Medicine Seminar, Invited Speaker, Adelaide, Australia
d. The University of Adelaide, Fertility and Conception Theme Meeting, Invited Speaker, Adelaide, Australia
e. The University of Melbourne, Peter MacCallum Cancer Centre, Invited Speaker, Melbourne, Australia
f. South Australian Health and Medical Research Institute (SAHMRI), Invited Speaker, Adelaide, Australia Gilbert W. Beebe Symposium on the Future of Low-Dose Radiation Research in the United States
g. James Cook University, ARC Centre of Excellence for Coral Reef Studies Seminar, Invited Speaker, Townsville, Australia (https://www.youtube.com/watch?v=T47cw7Bst0Y)
h. The University of Adelaide, Northern Communities Health Foundation Seminar, Invited Speaker, Adelaide, Australia (https://www.youtube.com/watch?v=Fhrs644pqUc)
i. American Nuclear Society and Health Physics Society Meeting, Inivited Speaker, Tri-Cities, Washinton
j. Wayne State University, Eugene Applebaum College of Pharmacy & Health Sciences, Keynote Speaker for College Research Day, Detroit, MI

2019

a. Sigma Xi Pizza Lunch Seminar, Keynote Speaker, Research Triangle Park, NC
b. Gilbert W. Beebe Symposium on the Future of Low-Dose Radiation Research in the United States, Invited Speaker, Washington, DC
c. Environmental Mutagenesis and Genomics Society, Alexander Hollaender Award Recipient, Keynote Speaker, Washington, DC
d. Personalized Lifestyle Medicine Institute, Research and Innovation Leadership Award, Keynote Speaker, Seattle, WA

2022

a. 10th Annual Thought Leaders Consortium Meeting, Keynote Speaker, Seattle, WA

2023

a. Age Management Medicine Group (AMMG) Meeting, Invited Speaker, Miami, FL
b. Cameron Lecture, Department of Medical Physics, University of Wisconsin, Madison, WI

2024

a. CHHE Perinatal Environmental Exposures and Later Life Disease meeting, Keynote Speaker, Department of Biological Sciences, NC State University, Raleigh, NC

I. VISITING PROFESSORSHIPS

1. Visiting Assistant Professor in Human Oncology at the University of Wisconsin-Madison (July, 1981 - October, 1981)
2. Visiting Research Scientist at the Centro di Studi Nucleari, ENEA-C.R.E., Casaccia, Roma, Italia (November, 1982 - December, 1982)
3. Visiting Professor at McArdle Laboratory for Cancer Research, Department of Oncology, University of Wisconsin-Madison, Madison, WI (2012 - 2021)
4. Visiting Professor, University of Adelaide, Robinson Research Institute and School of Medicine, Adelaide, Australia (March, 2018 - June, 2018)

J. EDITORIAL BOARD MEMBER

1. *Hepatology (1997 - 2001)*
2. *Toxicological Sciences (1999 - 2004)*
3. *Comparative Hepatology (BioMed Central) (2001 - 2009)*
4. *TheScientificWorldJOURNAL (Embryology Domain) (2001 - 2011)*
5. *Epigenetics, Editor (2005 - present)*
6. *Epigenomics, Associate Editor (2009 - present)*
7. *Environmental Epigenetics, Editor (2015 - present)*

K. PROFESSIONAL SOCIETY MEMBERSHIPS

1. American Association of Cancer Research
2. Society of Toxicology
3. Sigma Xi
4. Tau Beta Pi

L. TEACHING

Laboratory Training of Students, Postdoctoral Fellows and Visiting Faculty

a. Medical Students (3rd year)

1) William G. Kaelin, Jr., M.D. (1982-1983)
2) Jonathan M. Mansbach, M.D. (1994-1995)
3) Tara A. Mills (1998-1999)
4) Eun Ha Park, M.D. (1996-1997)
5) Lori J. Pierce, M.D. (1984-1985)
6) Lawrence Saperstein, M.D. (1991-1992)
7) Sean R. Sue, M.D.(1993-1994)

b. Graduate Students

1. Autumn Bernal, Ph.D. Student (2007-2012, Duke University)
2. Radhika Das, Ph.D. Student (2004-2009, Duke University)
3. Dana Dolinoy, Ph.D. Student (2004-2007, Duke University)
4. Heather Evans, Ph.D. Student, (1999-2005, Duke University)
5. J. Keith Killian, M.D./Ph.D. Student, (1996-2001, Duke University)
6. Philippe Luedi, Ph.D. Student (2004-2006, Duke University)
7. Herbert Reisenbichler, Ph.D. Student, (1991-1995, University of Salzburg)
8. Jennifer Weidman, Ph.D. Student, (2001-2006, Duke University)

c. Residents/Fellows

1. Ravi S. Chari, M.D., Department of Surgery, (1992-1994)
2. Timothy A. Jamieson, M.D., Ph.D., Department of Radiation Oncology (1998-1999); Received Radium Award in 1999
3. Shanaz Sultan, M.D., Department of Medicine (2001-2002)
4. Daniel D. Hampton, M.D., Department of Medicine, (2009-2011)

d. Postdoctoral Fellows

1. Teresa Alati, Ph.D. (1986-1990)
2. Monica Bandera, Ph.D. (1998-1999)
3. J. Scott Brockenbrough, Ph.D. (1990-1992)
4. Angus T. De Souza, Ph.D. (1993-1996)
5. Dana Dolinoy, Ph.D. (2007-2008)

6. Peter M. Eckl, Ph.D. (1986-1988)
7. J. Greg Falls, Ph.D. (1996-1999)
8. Gerald R. Hankins, Ph.D. (1991-1996)
9. Trang Huynh, Ph.D. (2002-2005)
10. Jeng-Jong Hwang, Ph.D. (1990-1991)
11. Feng-Ming Kong, M.D., Ph.D. (1992-1998)
12. Grace Li, Ph.D. 2009-2012
13. Sharon Meyer, Ph.D. (1986-1991)
14. Jeremy J. Mills, Ph.D. (1993-1996)
15. Susan Murphy, Ph.D. (1998-2003)
16. David J. Pulford, Ph.D. (1996-1999)
17. David A. Skaar (2007-2012)
18. Robert Waterland, Ph.D. (2000-2003)
19. Jennifer Weidman, Ph.D. (2006-2007)
20. Andrew Wylie, Ph.D. (1997-2001)
21. Aiping Zhang, Ph.D. (2007-2011)

e. Visiting Research Scientists

1. Jin Choe, M.D. Ph.D., Hamchoon Women's Clinic, Hamchoon Institute of Genetics and Infertility, Seoul, Korea (2007-2008)
2. Xiao-long Fu, M.D., Ph.D., Department of Radiation Oncology, Shanghai Cancer Hospital & Cancer Institute, Shanghai Medical University, Shanghai, P.R. China (1998-2001)
3. Takashi Hisabe, M.D., Department of Gastroenterology, Fukuoka University Chikushi Hospital, Fukuoka, Japan (2001-2003)
4. Changkun Hu, M.D., Department. of Radiation Oncology, Cancer Hospital and Cancer Institute, Shanghai Medical University, Shanghai, P.R. China (2000-2002)
5. Jeng-Jong Hwang, Ph.D., Institute of Radiological Sciences, National Yang-Ming University, Taipei, Taiwan (1999-2000)
6. Hong-Seok Jang, MD., Ph.D., Department of Radiation Oncology, Uijongbu St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea (1999-2001)
7. Tadashi Murase, M.D., The Second Tokyo Hospital, Tokyo, Japan (1992-1994)
8. Catherine Nolan, Ph.D., University College Dublin, Dublin, Ireland (2000-2001)
9. Yoshihiko Oka, M.D., Ph.D., Department of Gastroenterology, Fukuoka University Chikushi Hospital, Fukuoka, Japan (1998-2000)
10. Ling-Wei Wang, M.D., Department of Radiation Oncology, Veterans General Hospital, Taipei, Taiwan (1998-1999).
11. Watson, Rebecca, Ph.D., MitreTec, Inc., Washington, DC (2005-2006)
12. Tomoya Yamada, D.V.M., Ph.D., Sumitomo, Ltd., Osaka, Japan (1995-1997)

M. RESEARCH INTERESTS

1. *IGF2R* in Human Health and Disease. We identified the imprinted *mannose 6-phosphate/insulin-like growth factor 2 receptor (M6P/IGF2R)* as a tumor suppressor that is mutated early in the genesis of breast, esophageal, head and neck, liver, lung, and prostate cancers. We also showed that imprinting at the *M6P/IGF2R* locus, which evolved about 180 million years ago after the divergence of monotremes from therian mammals, was subsequently lost in the near primate ancestors that ultimately gave rise to humans. The *M6P/IGF2R* is, therefore imprinted and expressed only from the maternal allele in mice, but is biallelically expressed in humans. Consequently, the frequency of cancers that require *M6P/IGF2R* inactivation for their formation is predicted to be species dependent. This has important human health ramifications since mice are used to determine our cancer risk to environmental toxicological agents. We have now made a floxed *M6p/Igf2r* conditional knockout mouse that can be used it to investigate the role of this unique multifunctional receptor in the formation of cancer and cognitive ability.

2. Epigenetics, Genomic Imprinting, and Disease Susceptibility. Extensive human epidemiological studies and experimental animal results support the early origins of adult disease hypothesis. This theory posits the intriguing idea that the evolution of developmental epigenetic plasticity, which enables an organism to adapt to environmental signals during early life, can also increase the risk of developing chronic diseases when there is a mismatch between the perceived environment and that which is encountered in adulthood.

Our investigations with the A^{vy} mouse model also support this theory. We demonstrated that maternal dietary supplementation with methyl donating compounds or the phytoestrogen, genistein, alters coat color and incidence of obesity in the offspring by increasing the DNA methylation of an IAP transposon upstream of the *Agouti* gene. Moreover, supplementation of the maternal diet, with either methyl donating compounds or genistein, negates the deleterious effects of environmental exposure to the plasticizer and toxicant, bisphenol A, by blocking its ability to cause IAP hypomethylation. We have also recently shown that low doses of ionizing radiation result in epigenetic-induced positive adaptive responses in A^{vy} offspring that are mitigated by antioxidants. Thus, we have now shown, for the first time, that the epigenome functions in linking the effects of exposures to chemical and physical agents during early life to disease formation in adulthood.

To fully understand the etiology of the most devastating diseases that plague humans, like Alzheimer's disease, autism, bipolar disorder, cancer, diabetes, obesity, and schizophrenia, the epigenetically labile targets in humans need to be identified, and their role in the etiology of human disease characterized. Imprinted genes are a particularly important group of epigenetically regulated genes since only one parental allele is functional. Thus, either a single genetic or epigenetic mutation in imprinted genes can result in parent-of-origin inheritance of disease.

We previously developed a machine-learning algorithm for interrogating entire mammalian genomes for genes highly probable of being imprinted. These AI algorithms successfully identified candidate imprinted genes in both the mouse and human genomes (Luedi *et al*, Genome Res. 15: 875-884, 2005; Luedi *et al*, Genome Res. 17: 1723-1730, 2007). We also recently identified 1,488 candidate imprint control regions (ICRs) in the human genome - the *Human Imprintome* (Jima *et al*, Epigenetics 17: 1920-1943, 2022). Interestingly, of the 102 previously predicted imprinted genes, 34% are adjacent to a candidate ICR, providing further evidence that they are indeed imprinted.

We have now developed the first Infinium DNA methylation array for the *Human Imprintome* (Carreras-Gallo et al., 2024 https://doi.org/10.1101/2024.01.15.575646). Thus, a major research effort in the future will be use this array chip to determine the role genomic imprinting plays in the genesis of human pathologies in response to chemical and physical environmental exposures early in development.

N. PARTICIPATION IN ACADEMIC AND ADMINISTRATIVE ACTIVITIES OF DUKE UNIVERSITY AND MEDICAL CENTER

1. Member of the Graduate School Faculty in Pathology, (1985-2012)
2. Promotions and Tenure Committee, Department of Radiation Oncology, Member, (1985-2004)
3. Director of the Animal and Cell Radiation Facility, a Cancer Center Shared Resource (1988-1998)
4. Program member of the Cell Regulation/Cancer Biology Program Planning Committee (1991-1992)
5. Member of the Energy Conservation Advisory Committee (1991)
6. Director, Division of Radiation and Molecular Oncology Research (1991-2003)
7. Director of Basic Research, Liver Surgery Program, (1992-1995)
8. Head of Module IV, Cancer Center Isolation Facility (1992-1998)
9. Integrated Toxicology Program, Member, (1992-2012).
10. Cell and Molecular Biology Training Program, Member, (1997-2012).

11. Integrated Toxicology Program, Member of Executive Committee, (1999-2012)
12. Duke University Program of Genetics and Genomics, Member, (2002-2012)
13. Duke Primate Center's Internal Advisory Committee, (2002-2006)
14. Duke Lemur Center's Internal Advisory Committee, (2006-2012)
15. Promotions and Tenure Committee, Department of Radiation Oncology, Member, (2010-2011)

O. PARTICIPATION IN ACADEMIC AND ADMINISTRATIVE ACTIVITIES OF NC STATE UNIVERSITY

1. Member of Center for Human Health and the Environment, (2014-prsent)
2. NC State University Commencement Address, (2016)
3. Epigenetics, Environment and Human Health Symposium, Co-Organizer, (2018)
4. Northern Communities Health Foundation (NCHF) Visiting Professorship, University of Adelaide, Australia, (2018).
5. CHHE Perinatal Environmental Exposures and Later Life Disease Symposium, Keynote Speaker, (2024)