



JOEL S. GREENBERGER, MD
Chairman, Director of Radiobiology

Education and Training:

1964 - 1967 Columbia University, New York, B.A. (Music)

1967 - 1971 Harvard Medical School, Boston, M.D. (cum laude thesis in a special field)

Honors and Awards:

Harvard Medical School Scholarship Honors Thesis: "*Two approaches to the quantitation of leukemic leukocyte functions in clinical disease*".

Sara Stone Burns Award of the Massachusetts Cancer Society (1977)

Claude Worthington Benedum Professorship of Radiation Oncology University of Pittsburgh Medical Center (1993)

National Institutes of Health Merit Award, Hematology II Study Section (1985 - 1993)

Grants

“Lung Radiation Protection by MnSOD-Transgene Therapy”

CMCR “Center for Medical Countermeasures Against Radiation”

Mitochondrial Targets Against Radiation Damage

www.pittcmcr.org

Publications by peer-reviewed Journals

1. Carpenter Matthew, Epperly Michael W, Agarwal Anurag, Nie Suhua, Hricisak Lauren, Niu Yunyun, Greenberger Joel S. Inhalation delivery of manganese superoxide dismutase-plasmid/liposomes (MnSOD-PL) protects the murine lung from irradiation damage. *Gene Therapy*, 12:685-690, 2005.
2. Epperly Michael W, Cao Shaonan, Goff Julie, Shields Donna, Zhou Shuanhu, Glowacki Julie, Greenberger Joel. Increased longevity of hematopoiesis in continuous bone marrow cultures and adipocytogenesis in marrow stromal cells derived from SMAD3^{-/-} mice. *Experimental Hematology*, 33:353-362, 2005.
3. Yaron Perry, Epperly Michael W, Fernando Hiran C, Klein Ed, Finkelstein Sid, Greenberger Joel S, Luketich James D. Photodynamic therapy induced esophageal-stricture-An animal model: from mouse to pig. *Journal of Surgical Research*, 123:67-74, 2005.
4. Zhou Shuanhu, Lechpammer Stanislav, Greenberger Joel, Glowacki Julie. Hypoxia inhibition of adipocytogenesis in human bone marrow stromal cells requires TGF β /Smad³ signaling. *J. Biol. Chem.*, 280(4):22688-22696, 2005.
5. Epperly Michael W, Zhang Xicheng, Nie Suhma, Cao Shaonan, Kagan Valerian, Tyurin Vladimir, Greenberger Joel S. MnSOD-Plasmid Liposome

gene therapy effects on ionizing irradiation induced lipid peroxidation of the Esophagus. *In Vivo*, 19:997-1004, 2005.

6. Epperly Michael W, Shen Hongmei, Zhang Xicheng, Nie Suhma, Cao Shaonan, Greenberger Joel S. Protection of esophageal stem cells from ionizing irradiation by MnSOD-Plasmid Liposome gene therapy. *In Vivo*, 19:965-974, 2005.

7. Wolski Michal J, Bhatnagar Ajay, Flickinger John C, Belani Chandra P, Ramalingam Sakkaraiappan, Greenberger Joel. Multivariate analysis of survival, local control, and time to distant metastases in patients with unresectable non-small cell lung carcinoma treated with three-dimensional conformal radiotherapy with or without concurrent chemotherapy. *Clinical Lung Cancer*, 7(2):100-107, 2005.

8. Lechpammer Stanislav, Epperly Michael W, Zhou Shuanhu, Nie Shuna, Glowacki Julie, Greenberger Joel S. Antioxidant pool regulated adipocyte differentiation *Sod2^{-/-}* bone marrow stromal cells. *Experimental Hematology*, 33:1201-1208, 2005.

9. Epperly Michael W, Goff Julie, Zhang Xichen, Shields Donna, Wang Hong, Shen, Hongmei, Franicola Darcy, Bahnson Alfred, Greenberger Emily E, Greenberger Joel S. Increased radioresistance, G2M checkpoint inhibition and impaired migratory capacity of bone marrow stromal cell lines derived from *SMAD3^{-/-}* mice. *Rad Research*, (in press).

10. Epperly Michael W, Greenberger Emily E, Franicola Darcy, Jacobs Samuel, Greenberger Joel S. Thalidomide radiosensitization of normal murine hematopoietic but not squamous cell carcinoma or multiple myeloma tumor cell lines. *In Vivo*, 20:xxx, 2006.

11. Epperly Michael W, Franicola Darcy, Zhang Xichen, Nie Suhua, Wang Hong, Bahnson Alfred, Shields Donna, Goff Julie, Greenberger Joel S. Decreased irradiation pulmonary fibrosis in *Smad3^{-/-}* marrow chimeric mice correlates to reduced bone marrow stromal cell migration in vitro. *Cancer Research*, (submitted).

12. Epperly Michael W, Wegner Rodney, Kanai Anthony J, Kagan Valerian, Greenberger Emily E, Nie Suhua, Greenberger Joel S. Irradiated murine oral cavity orthotopic tumor antioxidant pool destabilization by MnSOD-plasmid liposome gene therapy mediates tumor radiosensitization. *Radiation Research*, (submitted).
13. Epperly Michael W, Cao Shaonan, Zhang Xichen, Franicola Darcy, Kanai Anthony J, Greenberger Emily E, Greenberger Joel S. Increased longevity of hematopoiesis in continuous bone marrow cultures derived from mtNOS^{-/-} homozygous recombinant negative mice correlates with increased radioresistance of hematopoietic and bone marrow stromal cells. *Radiation Research*, (submitted).
14. Epperly Michael W, Shields Donna, Franicola Darcy, Zhang Xichen, Cao Shaonan, Carlos Timothy, Greenberger Joel S. Bone marrow from CD18^{-/-} (MAC-1^{-/-}) homozygous deletion recombinant negative mice demonstrates increased longevity in long-term bone marrow culture and decreased contribution to irradiation pulmonary damage. *Experimental Hematology*, (submitted).
15. Gorbunov NV, Morris JE, Greenberger JS, Thrall BD. Induction of p53 in bone marrow stromal cells by oxidative stress: implication of inducible nitric oxide synthase (NOS2). *Cell Growth & Differentiation* (submitted).
16. Blumberg D, Epperly MW, Jefferson M, Liu K, Cook T, Chung J, Kibbe M, Finkelstein S, Vodovotz Y, Zamora R, Robbins P, Kovesdi I, Greenberger JS, Billiar T. Gene therapy with the human inducible nitric oxide synthase gene sensitizes human cancer cells to ionizing radiation. *Advances in Brief Cancer Research* (submitted).
17. Greenberger JS, Goff JP, Mueller SM, Huard J, Deasy B, Koebler DJ, Glowacki JS, Houck RK. Comparison of muscle-derived stem cells with bone marrow stromal cells for application in orthopedic tissue engineering: Use of combinatorial cell culture. *J. Tissue Engineering* (submitted).

18. Goff JP, Shields DS, Hanley KH, Gooding WE, Greenberger JS. Cell fate decisions of individual daughters of the first doubling of human cord blood CD34+Thy-1+Lin- stem cell candidates are independent and do not affect lymphomyelopoiesis capacity. *Exp. Hematol.* (submitted).
19. Shimoga KB, Kalend AM, Clark KH, Greenberger JS. *SmartGate*: A fuzzy-logic and expert-rule based respiratory gating technique for free-breathing radiotherapy patients. *Radiology and Oncology* (submitted).
20. Epperly MW, Wegner R, Kanai AJ, Kagan V, Greenberger EE, Nie S, Greenberger JS. Irradiated murine oral cavity orthotopic tumor antioxidant pool destabilization plasmid liposome gene therapy mediates tumor radiosensitization. *Rad Res*, (submitted).
21. Greenberger Joel S, Kagan Valerian, Kanai Anthony J, Amoscato Andrew, Peterson Jim, Epperly Michael. Mitochondrial mechanisms of ionizing irradiation-induced apoptosis. *Apoptosis*, (submitted).
22. Mazzacurati L, Pattacini L, Brusa G, Mancini M, Benvenuti M, Barbieri E, Martinelli G, Baccarani M, Greenberger JS, Santucci MA. CHK2 drives late G₁/early S phase arrest of clonal myeloid progenitors expressing the p210 BCR-ABL tyrosine kinase in response to ST1571. *Oncogene*, (submitted).
23. Blumberg D, Epperly MW, Jefferson M, Liu K, Cook T, Chung J, Kibbe M, Finkelstein S, Vodovotz Y, Zamora R, Robbins P, Greenberger JS, Billiar T. Gene therapy with the human inducible nitric oxide synthase gene sensitizes human cancer cells to radiation. *Cancer Res*, (submitted).
24. Rea DJ, Greenberger JS, Lavelle JP. Review Article: Radiation cystitis: past, present, and future. *Br J Urol Int*, (submitted).