**10/26/20**

# JOEL S. GREENBERGER, M.D., F.A.C.R.O., F.A.C.R., F.A.S.T.R.O.

## Personal History:


Address: UPMC-Shadyside
Department of Radiation
Oncology 5150 Centre Avenue,
Rm. 533 Pittsburgh, PA 15232
greenbergerjs@upmc.edu
phone: 412-647-3602
fax: 412-647-6029


## 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)

## Professional Appointments:

1971 - 1972 Intern, Medicine II and IV (Harvard), Medical Service, Boston City Hospital, Boston

1972 - 1974 Staff Associate, Viral Carcinogenesis Branch, National Cancer Institute

1974 - 1976 Resident, Joint Center for Radiation Therapy, Harvard Medical School

1976 - 1979 Instructor in Radiation Therapy, Sidney Farber Cancer Institute

1976 - 1979 Research Associate in Microbiology, Harvard School of Public Health

1979 - 1982 Assistant Professor of Radiation Therapy, Harvard Medical School

1982 - 1984 Associate Professor of Radiation Therapy, Harvard Medical School

1982 - 1984 Associate Director of Research, Joint Center for Radiation Therapy, Dept. of Radiation Therapy, Harvard Medical School

1984 - 1993 Professor and Chairman, Dept. of Radiation Oncology, University of Massachusetts Medical School, Worcester, MA.

1993-Present Claude Worthington Benedum Professor and Chairman, Dept. of Radiation Oncology, University of Pittsburgh Medical Center/Co-Director of the Lung Cancer Center of the University of Pittsburgh Cancer Institute, Pittsburgh, PA.

**Service to ASTRO:**

1984 – 1993 Reviewer of abstracts for ASTRO Radiobiology Sessions yearly.

Session Co-Chair for 4 of these 9 years in Radiobiology Sessions.

ASTRO Meeting, 1995, Chaired Session on "How to Write a Research Grant", ASTRO Annual Meeting

1999 – 2004 Permanent Member, Radiation Study Section, National Cancer Institute/National Institutes of Health

Attended all meetings per year, reviewed Radiation Medicine, Radiobiology, and Radiation Physics grant applications from ASTRO members. Mentored K-Award and R-21 Award Junior Faculty.

1996 – 2017 Reviewed Abstracts for Radiobiology Sessions of ASTRO Annual Meeting

2013 – 2015 Member of Measures Subcommittee of the Clinical Practice Committee, Working with Co-Chair, Molly Gabel. Designed Measures Pathways for Breast Cancer and Lung Cancer.

2017 – 2018 Member of CHEDI.

Designed CHEDI sessions for the ASTRO Annual Meeting for Years 2018 and 2019 with Dr. Mansfield.

2018 – ASTRO Annual Meeting presented Educational Session with Drs. David Gius and Richard Larner on "How to Have a Successful Academic Career".

2018 - Spent one day with Radiation Oncology Residents and Junior Faculty at ASTRO Meeting mentoring them on editing and rewriting their individual K-Award, R-21, and R01 grant applications.

ASTRO 2018 Annual Meeting, Radiobiology Poster Session Reviewer and Session Director for Radiobiology.

ASTRO 2015 – 2016, Mentor for CHEDI Minority Student Fellowship Summer Research Program – Stephanie Thermozier.

ASTRO 2018 Meeting, brought my medical student, Stephanie Thermozier, to CHEDI, and facilitated her construction of a Blog, which is now widely utilized by medical students seeking summer fellowship funding from CHEDI. As a result of this blog and interaction with medical students, 10 applied for ASTRO Summer Minority Research Fellowships. I reviewed all this year.

ASTRO 2019, Session Co-Director for CHEDI Research Funding for Minority Students with Dr. Mansfield

ASTRO 2018 – 2019 Mentored Stephanie Thermozier during lab year between 3rd and 4th year of medical school for her preparation for Radiation Oncology Residency Program. Stephanie will be delivering an oral presentation at the CHEDI session on "Mentoring and Being Mentored as a Medical Student for a Career in Radiation Oncology".

Measures Subcommittee Member: 2015 – 2017

CHEDI: 2016 – 2018

Mentor for ASTRO Minority Fellowship Awardee: Stephanie Thermozier – Summer, 2015, and sponsoring her lab year at University of Pittsburgh 2018 – 2019.

Organizer of CHEDI Session planned for ASTRO 2020 Meeting – "Recruiting and Retaining Under-Represented Minority and Female Medical Students, Through Radiation Oncology Residency,and Into Academic Faculty Positions".

**Editorial Appointments:**

| | |
|---|---|
| 1983 - 1991 | Associate Editor, *Cancer Research* |
| 1983-85; 89-91 | Associate Editor, *Experimental Hematology* |
| 1992 - Present | Associate Editor, *Radiation Oncology Investigations, Clinical and Basic Research* |
| 1995 - Present | Editorial Board, *Biology of Blood and Bone Marrow Transplantation* |
| 1997 - Present | Editorial Board, *In vivo, International Journal for In vivo Research* |
| 2000 - Present | Editorial Board, *Human Tissue Engineering* |
| 2011 – Present | Editorial Board, *Fractions in Radiation Biology* |
| 2011 – 2013 | Associate Editor, "Frontiers in Radiation Oncology" 2010 – Present, Editor-in-Chief, Timothy Kinsella, M.D., Associate Editor, Anatoly Dritschillo, Joel Greenberger |
| 2014 – Present | Associate Editor, *Frontiers in Radiation Oncology* |
| 2015 – Present | Editorial Board Member, *Journal of Lung Diseases & Treatment* |

2017 – Present Editorial Board Member, *Annals of Radiation Therapy and Oncology*

**Administrative Appointments:**

1979 - 1982 Chairman of committee for selection of Fuller Junior Research Fellows, American Cancer Society, Massachusetts Division

1983 - 1988 Research Grant Scientific Advisory Committee, American Cancer Society, Massachusetts Division, Inc.

**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)

John M. Yuhas Award, University of Pennsylvania, Dept. of Radiaiton Oncology, May, 2012
Fellow, American College of Radiation Oncology, February, 2012
Fellow, American College of Radiology, May, 2013
Fellow, American Society of Therapeutic Radiology and Oncology, September, 2019

**Professional Societies:**

American Medical Association
American Society for Therapeutic Radiation Oncology (ASTRO), 1977-Present
Radiation Research Society
International Society for Experimental Hematology (ISEH)
American Society for Clinical Oncology
Society for Experimental Biology and Medicine
Reticuloendothelial Society International Society for Hematology
American Radium Society
American Society of Gene Therapy
Pennsylvania Radiological Society (1993-present)
Fanconi Anemia Research Fund
American Association for Cancer Research (AACR)
American Society for Hematology (ASH)
Tissue Culture Association
American College for Radiation Oncology (ACRO)
American College of Radiology (ACR)
American Society of Investigative Pathology

American Society of Radiation Oncology Chairmen
Pennsylvania Medical Society
Member, Radiation Study Section, NIH/NCI, 1995-2000

## TEACHING AND COMMITTEE EXPERIENCE (1977-1984):

### Teaching Responsibilities:

**National and International**

Educational session of American Society for Hematology annual meeting, December 1983. Lecture on "*Hematopoiesis and the Microenvironment*," given to entire society, The American Society for Hematology, attended in three separate sessions over two days by over 600 hematologists, radiation therapists, and practitioners.
American Society of Therapeutic Radiology, Radiation Biology Lectures, October 1983, San Diego, CA.

International Association for Experimental Hematology, Plenary Session, Organization of lectures on the Hematopoietic Microenvironment, 1982-83 for national meeting. Organizer of KROC Foundation and National Heart, Lung, and Blood Institute Symposium on Long-Term Bone Marrow Cultures, September 12-16, 1983, in Santa Ynez, CA; co-organizer with Dr. Daniel Wright and George Nemo (NHLBI and Walter Reed Institute); organization of program, editing and collating manuscripts for book.

**Local Teaching Experience**

Teaching laboratory radiobiology to medical students: 1977- Present

Training Radiation Oncology Residents: 1999-Present

Principal Investigator – now in Year 13 – of NIAID/NIH U19 Grant "Center for Medical Countermeasures Against Radiation"

Mentor for Pilot Project Awardees: 15 in number over years 2006 – 2018, 8 of whom have since obtained independent Radiobiology NIH grants.

Radiation Biology course for first year residents at Joint Center for Radiation Therapy. Organized 32 lectures for first year residents, July 1982, July 1983, July 1984. Overall lecture course on radiation biology, radiation side effects, radiation carcinogenesis and mutagenesis, and related areas of basic science.

Medical Oncology Fellows Orientation Lecture Series, Dana-Farber Cancer Institute. July-September 1979, 1980, 1981, 1982, 1983. Weekly Tuesday lectures given on Dana-12 to incoming DFCI fellows. Orientation lectures on approach to cervix cancer, bladder cancer, prostate cancer, interdisciplinary conference discussion on treatment of lymphomas, solid tumors, and organization of protocols from standpoint of radiation therapy. Lecture series last 12-16 weeks each year.

**Committee and Administrative Responsibilities**

## National

Editorial Committee for *Journal of Experimental Hematology*, 1983-present.
Chairman, Nomination Committee, *International Society of Experimental Hematology*, 1987-1989.

## Local Committee and Administrative Responsibilities

American Cancer Society, Massachusetts Division. Participants on Committee for selection of Fuller Junior Research Fellows of the American Cancer Society, Massachusetts Division, 1981-1982.

Chairman of the committee for selection of Fuller Fellows. Review and determine award of $1200 fellowships for the summer research experience for college juniors and seniors and placement of individuals who receive the award into research laboratories throughout Boston and the outlying areas. Personally interviewed the recipients of awards and matched them with research laboratories, 1982-1987.

American Cancer Society, Massachusetts Division, Scientific Advisory Board, 1983-84. Reviewed research grants and made recommendation letters on the funding of grants for individual post-doctoral fellows, start-up research grants, and continuation grants.

Joint Center for Radiation Therapy, executive Committee. Meetings four times per year to coordinate activities for Joint Center for Radiation Therapy under Dr. Samuel Hellman, 1980-83. Organized education retreats to develop the radical radiation therapy of breast cancer, and to organize new treatment guidelines for Hodgkin's disease. Associate Director, Research Administration, Joint Center for Radiation Therapy. Administrator of the Program Project Grant at the Joint Center with designation of specific projects, and interaction of interdisciplinary research grants in the Longwood Area. Coordinating individual research budgets and the administration of monies to investigators at Beth Israel Hospital, Children's Hospital, and Brigham and Women's Hospital for collaboration with scientific interaction of other projects in the Program Project Grant (1983-86).

## Clinical Responsibilities Involving Teaching

Teaching residents in radiation therapy at the Joint Center from 1977-1984. Instructed residents on the rotation of the Dana-Farber Cancer Institute in intraoperative therapy procedures including gold seed implantation of pleura and retroperitoneal areas, intracavitary radium techniques, breast implants for primary treatment of breast cancer, and use of treatment planning and linear accelerator for the radical radiotherapy and palliative radiotherapy of human cancer. Teaching residents in the area and science of conference preparation, basic medical oncology, and radiation therapy teaching of residents on the rotation. One to two residents have always been at the DFCI rotation since 1977 when I joined the staff (1977-84).

# ADMINISTRATIVE AND TEACHING RESPONSIBILITIES

## 1984 - 1993

## Administration

Member - Faculty Executive Committee, University of Massachusetts Medical School.

Member - Group Practice Advisory Committee.
Member - UMass Medical Center Hospital Executive Council.
Member - Chancellor/Dean Advisory Committee
Member - UMass Medical School Quality Assurance/Risk Management Committee

**Teaching Local**

1990-1993 Director of Radiation Biology Course (22 weeks) yearly for students in UMMC Department of Radiation Oncology School For Radiation Therapy Technologists (Radiation Therapists

Deliver 22 lectures per year with mid-term and final examination.

This curriculum is unique for radiation therapist training in that it is the only program with tissue culture laboratory (hands on) experience for clinical radiation therapists. The students carry out radiation survival curves on mammalian cell lines, plot the data, calculate linear regression and linear quadratic models of radiation survival curves using computer facilities and analyze their data relative to published data in the their textbooks.

Faculty Member of the University of Massachusetts Medical Center Graduate School - deliver 2-3 lectures per year to Ph.D. candidate graduate students in cell biology, biochemistry, and molecular genetics. With the Hospital Director of Risk Management, Hospital Chief of Staff, and other faculty, design lecture and interactive courses for second and third year medical students for all aspects of quality assurance/risk management including appropriate charting of data, patient and family interview techniques, communication skills, and design new techniques for analysis of outcomes establishing standards of care for a variety of subspecialties. This course is designed to prepare medical students for patient encounters in a technically complex teaching hospital.

**Teaching - National**

(National) organizer of American Society Of Hematology Educational Session Program on Hodgkin's disease 1988 - 1990.
Participant and speaker, American Society of Hematology Educational Session Program on "*The Hematopoietic Microenvironment*" 1982 - 1984.

**Teaching - Thesis Advisor**

Thesis advisor for Shevde, Rupa, Harvard School of Dental Medicine, for a Ph.D. in biomedical sciences and thesis: "*Effect of cytokines and bone marrow stromal cells on putative osteoclast progenitor cells in vitro*" 1990 - 1993.

Thesis advisor for Jason Bush, Carnegie Mellon University, Department of Chemical Engineering, for a Ph.D. degree in chemical engineering and thesis: "*Design of a single cell bioreactor*" 1997 - Present.

**ADMINISTRATIVE AND TEACHING RESPONSIBILITIES (1993 - PRESENT)**
Member, University of Pittsburgh Medical Center (UPMC) Radiation Safety Committee - 1993 - Present
Member, UPMC Technology Transfer Committee - 1993 - Present

Member, University of Pittsburgh Medical Center (UPMC) Transplantation Council - 11/93 - Present
President, University Radiotherapy Associates, Practice Plan, 5/93 - 12/31/98.
Member, Executive Committee, Practice Plan Joint Federation, UPMC, 1994 - Present.
Member, Executive Steering Committee, UPMC, 1995 - 1997.
Member, Finance Committee, UPMC/S Oncology Network System. Co-Chair, Financial Integration Subcommittee, Unified Practice Plan, University Physicians Plan (UPP).
Member, Search Committee for Chair of Ophthalmology, UPMC, 1996.
Member, Search Committee for Chair of Neurosurgery, UPMC, 1997.
Member, Search Committee for Chair of Medicine, UPMC, 1997.
Member, Search Committee for Senior Vice Chancellor for Health Sciences, 1997-1998.
Department Coordinator, DOE Fellowship Program in the Radiation Sciences Program, 1997 - Present.
Member, Board of Directors, University of Pittsburgh Physicians (UPP) - (consolidated practice plan), 1/99 - Present.
Member, Compensation and Productivity Committee of UPP, 1/99 - Present.

**PROGRAMMATIC GRANT INVESTIGATOR REPRESENTATIVE**

Director of the Program Project Grant of the Joint Center of Radiation Therapy, 1983 - 1984 (PO1-CA12662)

Principal Investigator of SPORE Grant on Lung Cancer at the Pittsburgh Cancer Institute, 1994 - 1995 (P20-CA58235-02).

Organizer, with Armand Keating, M.D., of Keystone Symposium on the Hematopoietic Microenvironment, Taos, NM, 2/16/96 - 2/22/96.

**Board of Directors (Positions)**

ALG Company, 734 Forest Street, Marlborough, MA 01572 (1993 – 1998).

Pittsburgh Tissue Engineering Initiative - Board Member (1997 - 2000).

Automated Cell Technologies, Inc., 390 William Pitt Way, Pittsburgh, PA 15238 (1997 - 2000).

**Scientific Advisory Board (Positions)**

Automated Cell Technologies, Inc., 390 William Pitt Way, Pittsburgh, PA 15238 (1996 - Present).

**National Institutes of Health (Positions)**

Ad Hoc Member, Hematology II Study Section, 1982, 1984, 1987.
Ad Hoc Member, Radiation Study Section, 1999.

Permanent Member, Radiation Study Section, 9/99 - Present.

**Administrative Positions:**

1993 – Present Pennsylvania Radiological Society, Committee on Radiologic Aspecs of Disaster Planning (Environmental Radiology & Occupational Health)

**PATENTS: JOEL S. GREENBERGER, M.D.**

1. Inventors: Joel S. Greenberger and Peter H. Levine
Organization: Independent
Title: **"*Gene Therapy Using Stromal Cells*"**
J. Peter Fasse, Esquire
Fish & Richardson, P.C., Boston, MA
European Patent #0-081-490, Application #90301044.5 issued 09/21/94 – Joel S. Greenberger
USA Serial Patent #08/408,536 allowed 6/6/96 - filing date: 3/22/95 issued 12/15/98, #5,849,287.
Issued in Japan, 12/18/98, #2,865,354.
Serial #: #08/001,461. Cont.3 = #08/166,595. Cont #08/408,536, #5,681,592, issued.
Filing Date: January 7, 1993 - (Refiling - original date, 1989), Cont.3 #, 12/13/93. Countries: Europe - 7 countries, and Japan

2. Inventor: Joel S. Greenberger and Peter Levine
Organization: Independent
Title: "***A Method For Homing Hematopoietic Stem Cells To Bone Marrow Stromal Cells***"
J. Peter Fasse, Esquire
Fish & Richardson, P.C., Boston, MA
Reference File #05349002001
USA Serial Patent #07/415,186; Art. Unit #1806, Cont. filed 5/26/92, USA
Serial Patent #07/888203
Filing Date: September 29, 1989. Countries: USA, allowed 12/29/00. Issued 07/10/01, Patent #6,258,354.

3. Inventor: Joel S. Greenberger
Organization: University of Pittsburgh Medical Center
Title: ***"Protection From Ionizing Irradiation Or Chemotherapeutic Drug Damage By In vivo Gene Therapy"***
Michelle Marks, Ph.D., J.D.
Foley & Lardner, P.C.
Reference File #76333/101UNOF; Refiled #76333/108/UNOF; Refiled 10/13/96,
USA Serial Patent #08/136,079; Refiled 6/7/95, USA Serial #08/484,836
USA Patent #08/136,079 issue notice 7/10/96 in the USA; USA Patent #5,599,712, officially issued 2/4/97. 8/907/041 filed 08/6/97 divisional.
Filing Date: 10/15/93, 11/16/95 - Substitute declaration. Countries: USA

4. Inventors: Joel S. Greenberger and Nadia Jahroudi
Organization: University of Pittsburgh Medical Center

Title: **"*Transient Expression of Foreign Gene Targeted to Endothelial Cells*"**
Michelle Marks, Ph.D., J.D.
Foley & Lardner, P.C.
Reference File #76333/106/UNOF
USA Serial Patent #08/487,996, 8/874,884 filed 06/13/97 wrapper.
Filing Date: June 7, 1995. Countries: USA

5. Inventors: John Bayouth, Morthy Muthuswamy, M.M. Izndbakhsh, Andre Kalend, Joel S. Greenberger
Organization: University of Pittsburgh Medical Center
Title: **"*A Collision Avoidance Algorithm For Megavoltage Linear Accelerator Used In Dynamic Radiotherapy*"**
Richard V. Westerhoff, Esquire, Eckert, Seamans, Cherin & Mellott,
Attorneys At Law
Reference File #124552
USA Serial Patent #08/507,937
Filing Date: 7/27/95. Countries: USA

6. Inventors: David Hurwitz and Joel S. Greenberger
Organization: ALG Company, Marlborough, MA
Title: **"*Expansion Of Bone Marrow Stromal Cells*"**
J. Peter Fasse, Esquire
Fish & Richardson, P.C., Boston, MA
Reference File #07787/003001
USA Patent Serial #08/581,059, allowed 12/18/97, issued 6/16/98.
US Patent #5,766,950
Filing Date: 12/29/95, US Patent #5,962,323, issued USA 10/5/99.
European Patents Serial No. 95944686.5, Ref. 077/87/003EP1, allowed 1/6/2000

7. Inventors: David Hurwitz and Joel S. Greenberger
Organization: ALG Company, Marlborough, MA
Title: **"*Methods Of Preparing Bone Marrow Stromal Cells For Use In Gene Therapy*"**
J. Peter Fasse, Esquire
Fish & Richardson, P.C., Boston, MA.
Reference File #07787/004001
USA Serial Patent #08/581,053, US Patent #5,962,323. Issued USA 10/5/99.
Filing Date: 12/29/95

8. Inventors: Kristin L. Goltry and Joel S. Greenberger
Organization: University of Pittsburgh Medical Center
Title: **"*Detection of prior ionizing irradiation exposure by RT-PCR detection of RNA fragments identified by differential display*"**
Michelle Marks, Ph.D., J.D.
Foley & Lardner, P.C.

Reference File #76333/112/UNOF
USA Serial Patent #08/602,145, issued 2/13/2000 #6,025,336, allowed 1/13/2000
Filing Date: 02/15/96. Countries: USA

9. Inventors: Andre Kalend, Joel S. Greenberger, Takeo Kanade Karun B. Shimoga, Charalambos N. Athanassiou
Organization: University of Pittsburgh Medical Center and Carnegie Mellon University
Title: **"*Apparatus for automatically positioning a patient for treatment/diagnosis*"**
Richard V. Westerhoff, Esq., Eckert, Seamans, Cherin & Mellott, Attorneys At Law
Reference File #127443
USA Serial Patent #08/690,521; International filing, 07/29/97, #PCT/US/13366.
Filing Date: 07/31/96. Countries: USA allowed 10/01/97, issued 10/20/98, #5,823,192.

10. Inventors: Andre Kalend, Joel S. Greenberger, Takeo Kanade Karun B. Shimoga, Charalambos N. Athanassiou
Organization: University of Pittsburgh Medical Center and Carnegie Mellon University
Title: **"*Apparatus responsive to movement of a patient during treatment/diagnosis*"**
Richard V. Westerhoff, Esquire, Eckert, Seamans, Cherin & Mellott, 600 Grant St., 42nd Floor, Pittsburgh, PA, 15219, (412-566-6000)
Reference File #127444 and #127443
USA Serial Patent #08/715/834, US Patent #5,727,554.
Filing Date: 9/19/96. Countries: USA allowed 10/21/97, issued 3/17/98.
International Patent #W0/98/11822; Application #PCT/US97/16633, published 3/26/98.

11. Inventors: Andre M. Kalend, Joel S. Greenberger, Karun B. Shimoga, Charalambos N. Athanassiou, Takeo Kanade
Organization: University of Pittsburgh Medical Center and Carnegie Mellon University
Title: **"*Apparatus For Matching X-Ray Images With Reference Images*"** Richard V. Westerhoff, Esquire, Eckert, Seamans, Cherin,Mellott, Attor. At Law
Reference File #127442
USA Serial Patent #08/739,622, issued 7/21/98, #5,784,431.
Filing Date: 10/29/96. Countries: USA, allowed 2/10/98.

12. Inventors: Joel S. Greenberger, Paul A. DiMilla, Michael Domach, Raymond K. Houck
Organization: University of Pittsburgh Medical Center, Carnegie Mellon University, and Automated Cell Technology
Title: **"*A method and apparatus for holding cells*"**
Ansel M. Schwartz, Attorney,

425 North Craig St., Suite #301, Pittsburgh, PA 15213
Application Serial #08/741,628
Filing Date: 11/1/96; Countries: USA
International Application Filed: 10/31/97, PCT/US97/19834, allowed USA, 6/15/99. Issued 12/28/99, USA Patent Serial #08/741/628; Patent #6,008,010.

13. Inventors: David R. Hurwitz, Theodore Galanopoulos, Van Cherington, Peter Levine, and Joel S. Greenberger
Organization: ALG Company, Marlborough, MA
Title: **"*Methods for reducing adverse side effects associated with cellular transplantation*"**
Lee Crews, Esquire
Fish & Richardson, P.C., Boston, MA.
Reference File #
USA Serial Patent # 6,387,366
Filing Date: Issue Date: 5/14/02

14. Inventors: James F. Antaki, Joel S. Greenberger, John A. Holmes, and Philip Schauer.
Organization: University of Pittsburgh
Title: **"*Apparatus and a method for automatically introducing implants into soft tissue with adjustable spacing*"**
Richard V. Westerhoff, Esquire, Eckert, Seamans, Cherin & Mellott, 600 Grant St., 42nd Floor, Pittsburgh, PA, 15219, (412-566-6000)
Reference File #214001-00689
USA Serial Patent #6,270,472
Filing Date: 12/29/98, issued 08/07/01

15. Inventor: Joel S. Greenberger
Organization: University of Pittsburgh Medical Center
Title: **"*Protection of esophagus from chemotherapeutic or irradiation damage by some gene therapy*"**
Barbara A. McDowell, Foley & Lardner Attorneys At Law, Washington, DC.
Reference File #00237
USA Serial Patent #09/075/532, Patent #6,221,848
Filing Date: 1998, Allowed 10/17/00. Issued USA 04/24/01.

16. Inventor: Joel S. Greenberger, M.D., (Lincoln, MA), and Peter H. Levine, M.D. (Worcester, MA)
Organization: ALG Company, Marlborough, MA.
Title**: "*Gene Therapy Using Stromal Cells*"**
Attorney:
Reference File #
Application #914631, Issued 11/30/99, US.A.
USA Serial Patent #5,993,801
Filing Date: 8/19/97

17. Inventor: Luketich JD, Greenberger JS.
Organization: University of Pittsburgh Medical Center
Title: **"*Protection of esophagus from PDT damage by MnSOD-PL gene therapy*"**
Barbara A. McDowell, Foley & Lardner Attorneys At Law, Washington, DC.
Reference File #
USA Serial Patent # Provsional filed 01/16/01 – have one year to convert.
Filing Date: 01/05/01

18. Inventor: Joel S. Greenberger, M.D., Michael W. Epperly, Ph.D.
Organization: University of Pittsburgh Cancer Institute
Title: **"*Isolation of a transplantable esophageal/intestinal stem cell and methods of use thereof*"**
Leslie Serunian, Esquire, Morgan & Finnegan, L.L.P., 345 Park Avenue, New York, NY, 10154-0053
Client Reference File#540; Attorney Reference File #2710-4009
USA Serial Patent #
Filing Date:

19. Inventor: Joel S. Greenberger, M.D.
Organization: University of Pittsburgh Cancer Institute
Title: **"Protection from ionizing irradiation or chemotherapeutic drug damage by in vivo gene therapy"** (Continuation – In – Part = CIP)
Attorney: Foley & Lardner Attorneys at Law, Washington, D.C.
Reference File #:
Filing Date: 8/6/1997 C/P, Allowed 12/29/2004, Issued: 5/3/2005
USA Patent Application No.: 08/907,041 reassigned #6,887,856
Our Ref.: 076333-0108
Your Ref.: 556-PITT

20. Inventor: Mitchell Fink, M.D., Joel Greenberger, M.D., Michael Epperly, Ph.D.
Title: **"Provisional patent application entitled "Radioprotective Agents"**
Patent Application for Novel Radioprotective Agents
Our Ref: 027704.00027, Serial # PCT/USOG/28530, JH ref. 002.00B1PCT, Pitt Ref. 01007
Filing Date: 7/27/2005

21. Inventor: Anthony Kanai, Ph.D., Mark Zeidel, Ph.D., Michael Epperly, Ph.D., Joel S. Greenberger, M.D.

Title: **"Inhibition of Mitochondrial Nitric Oxide Synthase protects the bladder urothelium against radiation damage"**
Our Ref.:
Filing Date: 9/30/05
Date Occurred: 2/1/03

22. Inventor: Joel Greenberger, M.D.
Title: Provisional Patent "**Emergency Management System" U.S. Patent Application No. 60/820,116, refilled as No. 11/780, 042**
Our Ref.: 06-0059-02
Filing Date: 7/24/06
Notice of Allowance: 6/30/12, 10/15/12 issued
Issued: #8, 289, 152

23. Inventors: Peter Wipf, Natalia A. Belikova, Jianfei Jiang, Joel S. Greenberger, Joshua G. Pierce, and Michael Wayne Epperly
Title: **"Use of Targeted Nitroxide Agents in Preventing, Mitigating, and Treating Radiation Injury"**
Pitt Ref.: 01734
JH Ref.: 0002.0145P
Serial # 61/081,573, #13/006, 640
Jurisdiction: Provisional, full
Issued: 7/14/11 US#2011/0172214A, issued 9/2/14 US# 8, 822.541B2

24. Inventors: Michael W. Epperly, Joel S. Greenberger, Jianfei Jiang, Valerian E. Kagan, John S. Lazo, and Peter R. McDonald
Title: **"Radioprotective Agents"**
Pitt Ref.: 01830 0002.0158PCTUS, Webb reference: 6527-112733
JH Ref.: 0002.0158
Appl. # 61/107,394, Pub# 2011/0288178A (11/24/11) Appl. # 13/124, 924, filled 8/8/11
Filed: 10/22/08
Allowed: 10/7/14 Issued: 11/11/14 13/124,924

25. Inventors: Michael W. Epperly, Abhay Gokhale, Joel S. Greenberger, Peter Wipf, and Julie Glowacki
Title: **"GS-Nitroxide Stimulation of Bone Wound and Fracture Healing"**
Current Status: Submitted
Submitted: 4/27/09, Filing Date: 6/4/10
Pitt Ref.: 01966
KS Ref. #: 8123-88711-03
Appl. #: 13/32A, 999
Filed: 4/30/12
Allowed: 2/4/14 Patent date: 6/10/14
Publication No.: US8748369

26. Inventors: Michael W. Epperly, Joel S. Greenberger, Xiang Gao, Song Li, and Peter Wipf

Title: **"Intraesophageal Administration of Targeted Nitroxide Agents for Protection Against Ionizing Irradiation-Induced Esophagitis"**
Pitt Ref.: 02294
JH Ref.: 0002.0233P
Current Status: Submitted
Submitted: 11/12/10, filed: 1/4/2019
Allowed: 3/26/14 US Patent #2014/0199368A1, 16/240, 595
Issued: 7/17/14

27. Inventors: Michael W. Epperly and Joel S. Greenberger
Title: **"Carbamazepine is a Radiation Protector and Radiation Mitigator"**
Pitt Ref: 02293
Current Status: Submitted
Submitted: 11/12/10

28. Inventors: Louis D. Falo, Jr., Joel S. Greenberger, and Peter Wipf
Title: **"Topical Formulations of Targeted Nitroxide Agents"**
Pitt Ref: 02340
KS Ref. No.: 8123-86407-01
Application No.: 61/433,111
Filed: 01/14/2011

29. Inventors: Valerian E Kagan, Jeffrey Atkinson, Detcho A. Stoyanovsky, Michael Epperly, Joel Greenberger.
Title: **"Mitochondria-Targeted Specific Inhibitors of Cytochrome C Peroxidase Activity and Cardiolipin Oxidation as Protectors and Mitigators of Irradiation Injury"**
Pitt Ref No.: 02602
KS Ref. No.:
Application No.:
Filed: 10/31/11
Issued: 6/14/2016 Patent #9365597

30. Inventors: Peter Wipf, Michael Epperly, Joel S. Greenberger, Natalia Belikova, Jianfei Jiang, Joshua Pierce, Valerian Kagan.
Title: **"Use of Targeted Nitroxide Agents in Preventing, Mitigating, and Treating Radiation"**
Pitt Ref. No.: #01734
Application No.: #13/006, 640
Filed: 1/14/11

31. Inventors: Peter Wipf, Joel S. Greenberger, Michael W. Epperly, Melissa M. Sprachman, Julie Goff
Title: **"Bifunctional Compounds" "MMS350: A Novel Bifunctional Sulfoxide with Radioprotective Effects"**
Pitt Ref No.: 02601
Karlquist Ref. #8123-90010-05
Application No.: PCT/US2012/061109, No. 14/352,891, No. 14/880,862
Filed: 10/19/12, 4/18/14, filed maneded 10/12/15

Allowed: 9/16/16, Country: USA, US Patent No. 14/352,891, US Patent 9.546,144B2
Issued: #9200035 B2 (12/1/2015), 1/5/16, 01/17/2017 (see below)
Publication No.: W0Z013059651

32. Inventors: John S. Lazo, Joel S. Greenberger, Michael W. Epperly, Elizabeth R. Sharlow, Peter Wipf, and Erin M. Skoda
Title: **"Identification of Phosphoinositide-3-Kinase Inhibitors as Mitigators of Ionizing Radiation"**
Pitt Ref No.: 02624
Filed: 05/30/13

33. Inventors: Xiang Gao, Song Li, Peter Wipf, Michael W. Epperly, Joel S. Greenberger
Title: **"Formulations and Carrier Systems Including Compound Interactive Domains"**
Pitt Ref. No.: 02645
Attorney Ref. No.: 12-041P (Bartony & Hare) 12-041 US-APP. 14/651,840
KS Ref No.:
Application No.: PCT/US2013/74684, 14/651, 840
Filed: 12/12/13, allowed 8/30/18 Issued 1/8/2019 AS#10,172,795

34. Inventors: Kagan Valerian, Epperly Michael W, Greenberger Joel S.
Title: **"Selective Delivery of Radiation Protectors/Mitigators Into Mitochondria of Non-Malignant Cells"**
Pitt Ref. No.: 03305
Application No.:
Filed:

35. Inventors: Michael Epperly, Joel Greenberger, Valerian Kagan, Hulya Bayir
Title: **"Radioprotective Agents"**
Pitt Ref. No.: 01830 0002.0158PCTUS
Serial No.: 13/124,924
Webb Ref.: 6527-112733
Filed:

36. Inventors: Valerian Kagan, Detcho Stoyanovsky, Michael W. Epperly, Joel S. Greenberger
Title: **"Mitochondria-Targeted Inhibitors of Cytochrome C Peroxidase for Protection from Apoptosis"**
Pitt Ref. No.: 02481
Attorney Ref.: 5743-P40589US01
Application No.: 13/675,208
Jurisdiction: U.S.
Filed:

37. Inventors: Peter Wipf, Joel S. Greenberger, Michael Wayne Epperly, Melissa M. Sprachman, Julie Goff
Title: **"Bifunctional Compounds"**
Pitt Ref. No.: W02013059651
Serial No.:
Issued: 1/17/2017

Patent No.: 9.546,144B2
Application No.: PCT/US2012/061109
Filed: 10/19/12

38. Inventors: Michael W. Epperly, Abhay Sudhir Gokhale, Joel S. Greenberger, Peter Wipf, Julianne Glowacki
Title: **"Use of Targeted Nitroxide Agents in Bone Healing"**
Pitt Ref. No.:
Application No.: US8748369
Patent Date: 6/10/14
Filed: 6/4/10

39. Inventors: Joel S. Greenberger, Michael Epperly, Peter Wipf, Julianne Glowacki
Title: **Compounds for Bone Healing**
Pitt Ref. No.: 03622; BWH Ref. No 23469
Klarquist Ref. No. 8123-95570-03
Application No. 15/906,856, filed February 27, 2018
Country: U.S.
Allowed: 1/28/2019
Issued: 4/9/19 #10, 251, 860 B2

40. Inventors: Andrew Eller, Michael W. Epperly, Peter Wipf, Marsha Haley, Jose-Alain Sahel, Joel S. Greenberger
Title: **Intraocular Injection of JP4-039 to Protect the Retina from Radiation-Induced Apoptosis.**
Disclosed to Pitt OTM: 6/1/18

41. Inventor: Joel S. Greenberger
Title: **A Biobox for Radiobiology Experiments During Space Travel and On the Lunar Lander**
Disclosure to Pitt OTM: 2/6/18

42. Inventor: Xichen Zhang (University of Pgh.); Michael W. Epperly (University of Pgh.); Joel S. Greenberger (University of Pgh.)
Title: **Protection of Small Intestine by Genetically Engineered Probiotics**
Our Ref. No.: 05065
Subject: Univsity Ref. No. 05065
Your File: 05065 Pitt
Our File: 10504-042PV1 (Lisa C. Pavento, Principal, Meunier Carlin & Curfman LLC)

43. Inventor: Louis D. Falo, Jr., Joel S. Greenberger, Peter Wipf
Title: **Topical Formulations of Targeted Nitroxide Agents**
Appl. No: 16/447,716
Pub. No.: US 2020/0000793 A1
Pub. Date: Jan. 2, 2020
Filed: June 20, 2019

## SUMMARY OF CURRENT RESEARCH FUNDING

## ACTIVE

U19 AI0680201-13 (Greenberger) 09/01/15 – 08/31/21 3.60 calendar month
NIH/NIAID $2,381,415 DC ($1,285,964 IDC)
Mechanism-Directed Sequential Delivery of Radiation Mitigators
**Project 1: Sequenced Directed Delivery of Radiation Mitigators**
Project 1 in the CMCR is focused on using plasma cytokine protein signatures to determine the optimal time for delivery of a second radiation mitigator after GS-nitroxide has been delivered at 24 hrs. after total body irradiation.
Role: Project Co-Investigator

STTR (Rogers) 07/01/20-06/30/22
1.20 calendar months
ChromoLogic (direct)/NIAID (prime) $360,000 (Greenberger)
STTR 1R41AI157357-01
"Mitigation of Ionizing Irradiation-Induced Intestinal Damage by Second-Generation Probiotics LR-IL-22 and LR-IFN-β"
Mitigating normal tissue toxicity after exposure to ionizing radiation is critical to reduce mortality and morbidity, both for patients that receive pelvic or abdominal radiation therapy, and in the context of a RAD-NUC incident. We have developed second-generation probiotics engineered to express the therapeutic cytokines IL-22 or INF-β that have been shown to increase survival from 0–10% to 70–80%. The goal of this project is to continue to optimize and characterize these probiotic drugs for pivotal IND-enabling pre-clinical studies, which, if successful, will lead to the only FDA-approved radiation mitigators for GI toxicity.

## COMPLETED:

U19 AI0680201-13 (Greenberger) 09/01/15 – 08/31/20 1.20 calendar month
NIH/NIAID $2,381,415 DC ($1,285,964 IDC)
Mechanism-Directed Sequential Delivery of Radiation Mitigators
**CMCR Coordinating Center Core**
The goal of this core is to prepare web-based sites for access of archived data from the four CMCR programs, to design a radiation biology and methods website for education of scientists at all levels, to coordinate yearly meetings, and to provide steering committee telephone conference calls monthly.
Role: Core Leader

CMCR MCM Supplement (Greenberger) 08/01/2017-07/31/2018 2.04 calendar months
NIH/NIAID $500,000 DC ($777,917 IDC)
**Formulation and Optimized Delivery of JP4-039**
The goal of this project is to validate an FDA approved formulation for delivery of JP-4-309 in the mouse model of ARS and translate the data for study in a large animal model.

U19 AI0680201-13 (Greenberger) 09/01/2017-08/31/2018 0.60 calendar months
NIH/NIAID $110,493 ($61,507 IDC)
Mitigation of neutron irradiation by JP-4-039 (CMCR Supplement)
The goal of this project is to document the radiation mitigation effect of JP4-039 administered 24 hours after total body irradiation of mice give each of three exposures to the LD50/30 total body dose of:1) Pure neutron beam, 2)pure photon beam, or 2)mixed beam of 40%neutrons,60% photons" The third beam simulates that from a U-235 fission bomb.

U19 AI0680201-13 (Greenberger) 09/01/15 – 08/31/20 1.44calendar month
NIH/NIAID $2,381,415 DC ($1,285,964 IDC)
Mechanism-Directed Sequential Delivery of Radiation Mitigators
**Core A, Administrative Core**
The Administrative Core coordinates four projects, six scientific core entities, and the University of Pittsburgh CMCR with the other three CMCR Programs (Duke, Columbia, and UCLA).
Role: Principal Investigator

U19 AI0680201-13 (Greenberger) 09/01/15 – 08/31/20 1.02 calendar month
NIH/NIAID $2,381,415 DC ($1,285,964 IDC)
Mechanism-Directed Sequential Delivery of Radiation Mitigators
**Core C, Radiobiological Standardization Core**
Enter Description
Role: Core Co-Investigator

1U19AI68021-06 (Greenberger) 9/01/11 – 8/31/15 1.8 calendar months
NIH/NIAID $1,476,981
CMCR "Center for Medical Countermeasures Against Radiation" 9/1/11-8/31/15
**"Mitochondrial Targets Against Radiation Damage (CMCR)"**
Project I, Administrative Core, and Pilot Project. The goal of this is project is to develop radioprotector/mitigator drugs focused on neutralizing mitochondrial specific steps in early response to irradiation damage which will prevent irreversible cell death.

U01 DK085570-02 (Yu) 09/30/09 – 08/31/15 0.60 calendar months
NIH/NIDDK $12,172 DC/year (Greenberger)
**"Intestinal Stem Cell Survival and Renewal Coordinately Regulated by PUMA and p21"**
The goal of this project is to determine whether p53 upregulated modulator of apoptosis (PUMA) and its interaction with p21 mediates normal irradiation responses of intestinal stem cell crypt cells, and endothelial cells to irradiation damage, and how these modulations can be altered by inhibitors of PUMA.

P30 CA047904-22 (Davidson) 09/10/10 – 07/31/15 0.60 calendar months
NIH/NCI $12,172 DC/year (Greenberger)
**"Cancer Center Support Grant (Program Co-Leader)**
The goal of this project is to work with other members of UPCI Lung Cancer Center to determine the most effective way for combined modality support of non-small cell lung cancer patients using radiation therapy, chemotherapy, and surgical approaches.

NIHU19-AI068021 09/01/14 – 08/31/15 0.60 calendar months
"**CMCR Administrative Supplement"**
NIH/NIAID $107,678 (total) $71,075 (DC) (Greenberger)

R01CA119927-11 (Greenberger) 07/01/08 - 05/31/13 1.80 calendar months
NIH/NCI $186,604 DC/year
**"Mechanism of Irradiation Pulmonary Fibrosis"**
The goal of this grant is to define critical steps in irradiation pulmonary fibrosis and identify new targets for therapeutic intervention, thereby decreasing patient side effects and facilitating dose escalation in the initial treatment or retreatment of recurrent thoracic cancers.

RFA A1-04-045 09/01/12 – 08/31/13 1.2 calendar months
**"Center for Medical Counter Measures Against Radiation Supplemental Grant" U19A1068021**
NIH/NIAID $600,000 (Greenberger)

U19Al068021-05S1 (Greenberger) 09/22/09 – 08/31/11 0.12 calendar months
NIH/NIAID $198,020 DC/year
**"Mitochondrial Targets Against Radiation Damage (CMCR)** Supplement
The goal of this project is to determine whether GS-nitroxides, p53/mdm2/mdm4 inhibitors, and GS Nitric Oxide Synthase inhibitors act like MnSOD-PL when given to pregnant mice, to protect the fetus, and whether the mechanism of protection is through the placenta.

RO1 CA083876-10 (Greenberger) 12/01/99 - 07/31/11 1.20 calendar months
NIH/NCI $160,063 DC/year
**"Gene Therapy Reduction of Radiotherapy Esophagitis"**
The goal of this grant is to expand the molecular mechanism of esophageal radiation protection by MnSOD-PL administration.

R01 HL094488-02 (Kagan) 09/01/09 – 08/31/11 0.60 calendar months
NIH/NHLBI $37,784 DC/year (Greenberger)
**"Irradiation Damage and Protection of Pulmonary Endothelium Oxidative Lipidomics"**
The goal of this project is to determine whether radiation damage to the lung is mediated by oxidative changes in cardiolipin and phosphytidyl serine in the mitochondria of pulmonary endothelial cells compared to epithelial cells.

HHSO010020080062C (Greenberger) 09/16/08-09/15/10
3.96 calendar months
BARDA/HHS $2,725,629
**"Novel Mitochondrial Targeted Drugs for Treatment of the Irradiation-Induced Hematopoietic Syndrome"**
***This contract will develop the optimal GS-nitroxide drug (JP4-039) from a library of novel small molecules to be a new mitigator when delivered 24 hours after irradiation to enhance bone marrow stromal cell recovery and improve engraftment of circulating marrow stromal and hematopoietic stem cell progenitors in the irradiation damaged hematopoietic microenvironment.***

1-RO1-CA101837-01A2 **MnSOD-PL Irradiation Protection of the Oral Cavity**
NIH/NCI 1/1/05 – 12/31/08
Principal Investigator: Joel S. Greenberger, M.D. $1,250,000.00 (25% effort)
Competitive Renewal submitted.

1-RO1-AG025015-01 **Effect of Aging and Vitamin D Status on Osteoblastogenesis (Subcontract)**
NIH/NIA 9/30/04 – 7/31/09
Principal Investigator: Julie Glowacki, Ph.D.
Principal Investigator (Subcontract): Joel S. Greenberger, M.D. $100,000/yr. sub-contract from B.W.H., Boston (10% effort)
Competitive Renewal being prepared.

-R01-HL60132 – 4 – 8 - DRG/NIH 12/01/01 – 11/30/06, Renewed 2RO1-CA119927-08A 5 yrs. 8/1/08 –

7/30/2013 $1,250,000.00
Principal Investigator: Joel S. Greenberger, M.D. (25% Effort)
Co-Investigator: Michael W. Epperly, Ph.D.
***"Lung Radiation Protection by MnSOD-Transgene Therapy"***
The goal of this grant will be to use validated, genetically modified animal models along with quantitative molecular methods to elucidate the cellular mechanism of irradiation lung fibrosis and the level(s) at which epitope-hemagglutinin (HA)-tagged manganese superoxide dismutase (MnSOD) transgene therapy protects.

**PENDING**

U01 (Teles) 09/01/20-08/31/25
1.20 calendar months
University of Pennsylvania (direct)/NIH (prime) $615,453 (Greenberger)
**"Characterization of the pro-carcinogenic oral microbiome"**
As an expert in the field of oral cancer and Fanconi Anemia (FA), Dr. Joel Greenberger will contribute to the project by providing guidance regarding experiments and evaluation of data and interpretation of the findings generated in this proposal. He will collaborate with Dr. Flavia Teles by providing review of subject matter and oversight of the project, along with helping to design the overall project.

R01AI155452-01 (Greenberger) 12/01/20-11/30/25
2.40 calendar months
NIH/NIAID $3,942,877
**"Mitigation of Irradiation-Induced Gastrointestinal Syndrome by Second-Generation Probiotics LR-IL-22 and LF-IFN-beta"**
Total body irradiation (TBI) induced gastrointestinal (GI) syndrome is associated with decreased numbers of intestinal crypt stem cells, villus destruction, and breakdown of the intestinal barrier leading to sepsis and death within 10-15 days. Two repurposed FDA approved drugs IL-22 and IFN-β when delivered subcutaneously work as mitigators of lower TBI doses; however. we have discovered a superior strategy to deliver mitigators of higher GI Syndrome inducing TBI doses. Intraoral (gavaged) delivery of second-generation *Lactobacillus reuteri* probiotics, LR-IL-22 and LR-IFN-β at 24 h or later after TBI increases survival, increases intestinal stem cells, and regenerates crypts in C57BL/6 mice, providing a totally new approach to mitigation of the GI Syndrome.

Research Announcement (Greenberger) 09/01/20-08/31/25
0.36 calendar months
NASA $111,378
**"Characterization of the impact of Space Environment on Lactobacillus Reuteri: An Omics Approach for Countermeasures Development"**
The current research project seeks to leverage on advances in human organ-chips as a better suited model to study the effects of space radiation on astronauts. Furthermore, the investigation will test and validate a suite of safe, easily-administered countermeasures against radiation-induced damage, carcinogenesis, and decrements in neurocognitive performance, among other ancillary health benefits that can be used in a variety of circumstances both for human spaceflight and on Earth.

Federal Contract (Rogers) 04/01/21-03/31/24
1.20 calendar months
ChromoLogic (direct)/NIAID (prime) 536,504 (Greenberger)
**"Research Area 001 -- Development of Radation/Nuclear Medical Countermeasures (MCMs)"**

## BIBLIOGRAPHY

### PUBLICATIONS IN PEER REVIEWED JOURNALS:


1. Greenberger JS, Rosenthal DS, Moloney WC. Studies on hypermuramidasemia in the normal and chloroleukemic rat: The role of the kidney. J Lab Clin Med, 81:116-121, 1973.

2. Greenberger JS, Aaronson SA. *In vivo* inoculation of RNA C-type viruses inducing regression of experimental solid tumors. J Nat Cancer Inst, 51:1935-1938, 1973.

3. Stephenson JS, Greenberger JS, Aaronson SA. Oncogenicity of an endogenous C-type virus chemically activated from mouse cells in culture. J Virology, 13:237-240, 1974.

4. Greenberger JS, Aaronson SA. Selective techniques for isolation of morphologic revertants of Kirsten Murine Sarcoma Virus transformed nonproducer BALB/3T3: Biologic properties *in vitro* and *in vivo*. Virology, 57:339-346, 1974.

5. Aaronson SA, Stephenson JR, Greenberger JS. Cellular replication and the persistence of inducible RNA Type-C viruses. J Virology, 13:1404-1407, 1974.

6. Greenberger JS, Anderson GR, Aaronson SA. Transformation-defective virus mutants in a class of morphologic revertants of sarcoma virus transformed nonproducer cells. Cell, 2:279-286, 1974.

7. Greenberger JS, Stephenson JR, Aoki T, Aaronson SA. Cell surface antigens of murine sarcoma virus transformed nonproducer cells: Further evidence for lack of transplantation immunity. Int J Cancer, 14:145-152, 1974.

8. Greenberger JS, Stephenson JR, Moloney WC, Aaronson SA. Different hematologic diseases induced by Type-C viruses chemically activated from embryo cells of different mouse strains. Cancer Res, 35:245-252, 1975.

9. Greenberger JS, Aaronson SA. Cycloheximide induction of xenotropic Type-C virus from synchronized mouse cells. Metabolic requirements for virus activation. J Virology, 15:64-70, 1975.

10. Greenberger JS, Rosenthal DS, Aaronson SA, Moloney WC. Acute myleogenous leukemia of the Wistar/Furth rat: Establishment of a continuous tissue culture line producing lysozyme *in vitro* and *in vivo*. Blood, 46:27-38, 1975.

11. Greenberger JS, Stephenson JR, Aaronson SA. Temperature sensitive mutants of murine leukemia virus V: Impaired leukemogenic activity *in vivo*. Int J Cancer, 15:1009-1015, 1975.

12. Greenberger JS, Phillips SM, Stephenson JR, Aaronson SA. Induction of mouse Type-C RNA virus by lipopolysaccharide. J Immunol, 115:317-320, 1975.

13. Greenberger JS, Aaronson SA, Rosenthal DS, Moloney WC. Continuous production of peroxidase, esterase, alkaline phosphatase and lysozyme by clones of promyelocytes. Nature, 257:134-144, 1975.

14. Phillips SM, Stephenson JR, Greenberger JS, Lane PE, Aaronson SA. Release of xenotropic Type-C RNA virus in response to lipopolysaccharide: Activity of lipid-A portion upon B-lymphocytes. J Immunol, 116:1123-1128, 1976.

15. Greenberger JS, Cassady JR, Levene MB. Radiation therapy of thalamic, midbrain and brain stem gliomas. Radiol, 122:464-468, 1977.

16. Greenberger JS, Bocaccino CA, Szot SJ, Moloney WC. Chemotherapeutic remissions in Wistar/Furth rat and acute myelogenous leukemia: A model for human AML. Acta Hematol, 57:233-241, 1977.

17. Greenberger JS, Muse MB, Bocaccino CA, Moloney WC. Central nervous system relapse following chemotherapy of Wistar/Furth rat acute myelogenous leukemia: A model for human CNS leukemia. J Nat Cancer Inst, 58:1139-1146, 1977.

18. Karpas A, Hayhoe FGJ, Greenberger JS, Barker CR, Cawley JC, Lowenthal R, Moloney WC. The establishment and cytological, cytochemical and immunological characterization of human haemic cell lines: Evidence for heterogeneity. Leukemia Res, 1:35-49, 1977.

19. Bensinger WI, Robbins KS, Greenberger JS, Aaronson SA. Different mechanisms for morphologic reversion of a clonal population of murine sarcoma virus transformed nonproducer cells. Virology, 77:750-761, 1977.

20. Greenberger JS, Campos-Neto A, Parkman R, Moloney WC, Karpas A, Schlossman SF, Rosenthal DS. Immunologic detection of intracellular and cell surface lysozyme with human and experimental leukemic leukocytes. Clin Immunol & Immunopath, 8:318-334, 1977.

21. Greenberger JS, Hassan LR, Karpas A, France DS, Moloney C. Leukocyte alkaline phosphatase elevation in human acute leukemia derived cell lines cultured in diffusion chambers. Scan J Haemat, 19:242-254, 1977.

22. Greenberger JS, Chaffey JT, Rosenthal DS, Moloney WC. Irradiation for control of hypersplenism and painful splenomegaly in myeloid metaplasia. Int J Rad Onc Biol Phys, 2:1083-1090, 1977.

23. Greenberger JS, Moloney WC. Proliferative response of clonal acute myelogenous leukemia cells in localized grafts of normal bone marrow stroma to *in vivo* stimulation of myelopoiesis. Exp Hematol, 6:141-148, 1978.

24. Greenberger JS, Gans PJ, King V, Muse MB, Karpas A, Moloney WC. Growth of myeloblasts and promyelocytes from 84 untreated patients with myeloid leukemias or refractory dysmyelopoietic anemia in diffusion chambers in irradiated rates: Comparison to continuous tissue culture lines. In:

Bentvelzen P, (ed). Advances In Comp. Leukemia Research. Elsevier/North Holland Biomedical Press. Vol. 11, pp. 299-302, 1978.

25. Greenberger JS, Karpas A, Gans PJ, Neumann H, Moloney WC. Increased myeloid-associated enzymes in Epstein-Barr virus nuclear antigen positive human cell lines exposed to butyric acid *in vitro*. Blood, 51:1073-1083, 1978.

26. Greenberger JS, Lockwood CJ, France DS, McGrath T, Moloney WC. Total body irradiation and bone marrow transplant in an inbred rat model of acute myelogenous leukemia. Int J Rad Oncol Biol Phys, 4:421-427, 1978.

27. Greenberger JS, Newburger P, Karpas A, Moloney WC. Constitutive and inducible granulocyte macrophage functions in mouse, rat and human myeloid leukemia-derived continuous tissue culture lines. Cancer Res, 38:3340-3348, 1978.

28. Karpas A, Hayhoe FJG, Greenberger JS, Neumann H. Alkaline phosphatase in Epstein-Barr viral nuclear antigen positive cell lines. Science, 202:318-319, 1978.

29. Greenberger JS. Sensitivity of corticosteroid-dependent, insulin-resistant lipogenesis in marrow preadipocytes of mutation diabetic-obese mice. Nature, 275:752-754, 1978.

30. Greenberger JS. Phenotypically distinct target cells for murine sarcoma and leukemia virus marrow transformation *in vitro*. J Nat Cancer Inst, 62:337-348, 1979.

31. Ensminger W, Greenberger JS, Muse MB, Egan M, Moloney WC. A technique for preclinical evaluation of continuous infusion chemotherapy using the Wistar/Furth rat acute myelogenous leukemia. J Nat Canc Inst, 62:1265-1268, 1979.

32. Franklin KW, Greenberger JS, Moloney WC. Suppression of normal bone marrow granulopoiesis in diffusion chambers by syngeneic clonal acute myelogenous leukemia cells or peritoneal exudate macrophages. Acta Hematol, 61:317-325, 1979.

33. Greenberger JS, Gans PJ, Davisson PB, Moloney WC. *In vitro* induction of continuous acute promyelocytic leukemia cell lines in long-term bone marrow cultures by Friend or Abelson leukemia virus. Blood, 53:987-1001, 1979.

34. Greenberger JS, Weichselbaum RR, Botnick LE, Sakakeeny MA, Moloney WC. Cell biological effects of total body irradiation on growth and differentiation of acute myelogenous leukemia cells compared to normal bone marrow. Exp Hematol, 7: Suppl. 5, pp. 279-289, 1979.

35. Greenberger JS, Sakakeeny MA, Parker LM. *In vitro* proliferation of hematopoietic stem cells in long-term marrow cultures: Principals in mouse applied to man. Exp Hematol, 7:Suppl 5, pp. 135-148, 1979.

36. Greenberger JS, Davisson PB, Gans PJ. Murine sarcoma viruses block corticosteroid-dependent differentiation of bone marrow preadipocytes associated with long-term *in vitro* hemopoiesis. Virology, 95:317-333, 1979.

37. Newburger PE, Chovaniec ME, Greenberger JS, Cohen HJ. Functional changes in human leukemia cell line HL-60: A model for myeloid differentiation. J Cell Biol, 82:315-322, 1979.

38. Greenberger JS, Crocker AC, Jaffe N, Cassady JR, Vawter GF. Radiation therapy in patients with histiocytosis: Management of bone lesions and diabetes insipidus. Int J Rad Onc Biol Phys, 5:1749 1755, 1979.

39. Blum R, Wilson R, Greenberger JS, Corson JM. Combined approach to treatment of high-grade soft tissue sarcomas. Int J Rad Onc Biol Phys, 5:1281-1285, 1979.

40. Greenberger JS. Corticosteroid dependent differentiation of human bone marrow preadipocytes. *In vitro*, 15:823-828, 1979.

41. Greenberger JS, Donahue D, Sakakeeny MA. Induction of ecotropic endogenous murine leukemia virus in long-term bone marrow cultures from mouse strains of varying natural leukemia incidence. J Reticuloendothel Soc, 26:839-853, 1979.

42. Aaronson SA, Porzig K, Greenberger JS. Mechanisms of reversion of mammalian sarcoma virus transformed cells. In: Fox EM, (ed). Adv. Med. Diagnosis. Oxford and New York: Pergamon Press, Vol. 87, pp. 75-85, 1979.

43. Greenberger JS, Newburger PE, Lipton JM, Moloney WC, Sakakeeney MA, Jackson PL. Viral and cellular requirements for Friend virus granulocytic leukemogenesis in long-term marrow cultures. J Nat Canc Inst, 64:867-878, 1980.

44. Antman KH, Blum RH, Greenberger JS, Flowerdew G, Skarin AT, Canellos GP. Multimodality therapy for mesothelioma based on a study of natural history. Am J Med, 68:356-362, 1980.

45. Mauch P, Greenberger JS, Botnick LE, Hannon EC, Hellman S. Evidence for structured variation in self-renewal capacity within long-term bone marrow cultures. PNAS, USA, 77:2927-2930, 1980.

46. Greenberger JS, Wroble LM, Sakakeeny MA. Murine leukemia viruses induce macrophage production of granulocyte-macrophage colony stimulating factor *in vitro*. J Nat Canc Inst, 65:841-851, 1980.

47. Newburger PE, Pagano JS, Greenberger JS, Karpas A, Cohen HJ. Dissociation of opsonized particle phagocytosis and respiratory burst activity in an Epstein-Barr virus-infected myeloid cell line. J Cell Biol, 85:549-557, 1980.

48. Greenberger JS, Eckner RJ, Ostertag W, Colletta G, Boshetti S, Nagasawa H, Karpas A, Weichselbaum R, Moloney WC, Sakakeeny MA. Release of spleen focus forming virus (SFFV) in

differentiation inducible granulocytic leukemia cell lines transformed *in vitro* by Friend leukemia virus. Virol, 105:425-436, 1980.

49. Greenberger JS, Newburger PE, Sakakeeny MA. Phorbol myristate acetate stimulates macrophage proliferation and differentiation and alters granulopoiesis and leukemogenesis in long-term bone marrow cultures. Blood, 56:368-379, 1980.

50. Blum R, Corson M, Wilson RE, Greenberger JS, Canellos GP, Frei E, III. Successful treatment of metastatic sarcomas with cyclophosphamide, adriamycin and DTIC (CAD). Cancer, 46:1722-1726, 1980.

51. Richie J, Weichselbaum R, Marck A, Greenberger JS. Twice a day fractionation preoperative radiotherapy in patients with carcinoma of the bladder: A preliminary report. J Urol, 125:179-181, 1981.

52. Stilman R, Schiff T, Jaffe N, Traggis DC, Li F, Greenberger JS. Ovarian failure following cancer therapy in the prepubertal female. Am J Obs & Gyn, 139:62-66, 1981.

53. Cohen GI, Canellos GP, Greenberger JS. *In vitro* quantitation of engraftment between purified populations of bone marrow hemopoietic stem cells and stromal cells. In: Gale RP, (Eds), Pres. ICN UCLA Symposium on Autologous Bone Marrow Transplantation. New York: Academic Press, Vol. 29, pp. 491-505, 1980.

54. Nabel G, Greenberger JS, Sakakeeny MA, Cantor H. Production of multiple biological activities by a clone of inducer T-lymphocytes. PNAS, USA 78:1157-1161, 1981.

55. Greenberg HM, Goebel R, Cassady JR, Greenberger JS, Weichselbaum RR. Radiation therapy in the treatment of aggressive fibromatoses. Int J Rad Onc Biol Phys, 7:305-310, 1981.

56. Cassady JR, Greenberger JS, Levene MB. Radiotherapy of thalamic pontine and brain stem gliomas, an update. In: Chang C, (ed). Brain Tumor Therapy. New York: Academic Press, Vol., 9, pp. 151-154, 1982.

57. Greenberger JS. Self-renewal of factor-dependent hematopoietic progenitor cell lines derived from long-term bone marrow cultures demonstrates significant mouse strain genotypic variation. J Supramolec Str, 13:(4): 501-511, 1980.

58. Greenberg HM, Newburger PE, Parker LM, Greenberger JS. Generation of physiologically normal human peripheral blood granulocytes in continuous bone marrow culture. Blood, 58:724-731, 1981.

59. Greenberg HM, Parker LM, Newburger PE, Said J, Cohen GI, Greenberger JS. Corticosteroid dependence of continuous hemopoiesis *in vitro* with murine or human bone marrow. In: Neth R and Gallo RC, (ed). Modern Trends In Human Leukemia IV. Berlin: Springer Verlag. Vol. 26, pp. 289 293, 1981.

60. Feeney M, Knapp RC, Greenberger JS, Bast RC Jr. Elimination of leukemic cells from rat bone marrow using antibody and complement. Cancer Res, 41:3331-3335, 1981.

61. Newburger PE, Baker RD, Hansen SL, Duncan RA, Greenberger JS. Phorbol myristate acetate induces functionally deficient macrophage-like differentiation of HL-60 promyelocytic leukemia cells. Cancer Res, 41:1861-1866, 1981.

62. Greenberger JS, Shadduck RK, Jaenisch R, Waheed A, Sakakeeny MA. Effects of infection *in vitro* or germ line integration of Moloney murine leukemia virus on hematopoiesis in long-term bone marrow culture. Cancer Res, 41:3556-3565, 1981.

63. Weichselbaum RR, Greenberger JS, Karpas A, Schmidt A, Little JB. Radiosensitivity of human hematopoietic cell lines of distinguishable biochemical and physiological stages of differentiation. Radiol, 139:485-487, 1981.

64. Greenberger JS, Crocker AC, Vawter G, Jaffee N, Cassady JR. Results of management of 127 patients with systemic histiocytosis. Medicine, 60:311-338, 1981.

65. Osband M, Lipton J, Lavin P, Levey R, Vawter G, Greenberger JS, McCaffrey RP, Parkman R. Histiocytosis-X: Demonstration of abnormal immunity T-cell histamine H2 receptor deficiency, and successful treatment with thymic extract. N Eng J Med, 304:146-153, 1981.

66. Gordon W, Antman KH, Greenberger JS, Weichselbaum RR, Chaffey JT. Radiation therapy in the management of patients with malignant mesothelioma. Int J Rad Oncol Biol Phys, 8:19-25, 1982.

67. Sakakeeny MA, Greenberger JS. Granulopoiesis longevity in continuous bone marrow cultures and factor dependent cell line generation: Significant variation among 28 inbred mouse strains and outbred stocks. J Nat Canc Inst, 68:305-317, 1982.

68. Greenberger JS, Chang JS, Balzuno S, Fulmer S, King VP, Moloney WC. Effects of daily low dose gamma irradiation on growth and differentiation of human myeloblastic leukemia cells in diffusion chambers. Scan J Hematol, 27:355-364, 1981.

69. Karpas A, Greenberger JS. Ultrastructural expression of incomplete virus-like particles in murine myeloblasts growing *in vitro*. Annales de Virologie, Annales de l'Institute Pasteurs, Paris, 132:295-332, 1981.

70. Greenberger JS, Otten JA, Eckner RJ, Tennant RW. *In vitro* quantitation of lethal and leukemogenic effects of gamma irradiation on stromal and hematopoietic stem cells in continuous mouse bone marrow culture. Int J Rad Oncol Biol Phys, 8:1155-1165, 1982.

71. Antman K, Corson JM, Greenberger JS, Wilson R. Multimodality therapy in the management of angiosarcoma of the breast. Cancer, 50:2000-2003, 1982.

72. Ihle J, Keller J, Greenberger JS, Henderson L, Yetter RA, Morse HE, III. Phenotypic characteristics of cell lines requiring IL-3 for growth. J Immunol, 129:1377-1383, 1982.

73. Eckner RJ, Hettrick KL, Greenberger JS, Bennett M. Extended self-renewal capacity of pluripotential hemopoietic stem cells: Association with persistent Friend spleen focus forming virus. Cell, 31:731-738, 1982.

74. Devereux DF, Wilson RE, Corson JM, Antman KH, Greenberger JS. Surgical treatment of low grade soft tissue sarcomas. Am J Surg, 143:490-494, 1982.

75. Antman KH, Blum RH, Wilson RE, Corson JM, Greenberger JS, Amato BA, Ash AS, Canellos GP, Frei E, III. Survival of patients with localized high grade soft tissue sarcoma with multimodality therapy: A matched control study. Cancer, 51:393-401, 1983.

76. Greenberger JS, Hoffman N, Lieberman M, Botnick LE, Sakakeeny MA, Eckner RJ. Pool size of pluripotential hematopoietic stem cells increased in continuous bone marrow culture by Friend spleen focus forming virus. JNCI, 70:323-331, 1983.

77. Cohen GI, Greenberger JS, Canellos GP. Electron microscopic changes occurring in bone marrow stromal cells exposed to cytotoxic drugs *in vitro*. Symposium on Scanning EM of Bone Marrow. SEM, 1:359-365, 1982.

78. Shadduck R, Waheed A, Greenberger JS, Dexter TM. Production of colony stimulating factor in long-term bone marrow cultures. J Cell Physiol, 114:88-92, 1983.

79. Greenberger JS, Eckner RJ, Sakakeeny MA, Reid D, Nabel G, Hapel A, Ihle JN, Humphries KC. Effects of murine leukemia virus on generation of Interleukin-3 dependent hematopoietic progenitor cell lines from continuous marrow cultures. Federation Proceedings, 42(10):106-115, 1983.

80. Newburger PE, Robinson JM, Pryzwansky KB, Rosoff PM, Greenberger JS, Tauber AI. Neutrophil dysfunction with giant granules and defective activation of the respiratory burst. Blood, 61:1247-1257, 1983.

81. Antman KH, Pomfret EA, Aisner J, MacIntyre JM, Osteen R, Greenberger JS. Peritoneal mesothelioma: Natural history and response to chemotherapy. J Clin Oncol, 1:386-391, 1983.

82. Greenberger JS, Sakakeeny MA, Humphries KC, Eaves CG, Eckner RJ. Demonstration of permanent factor-dependent multipotential (erythroid/neutrophil/basophil) hematopoietic progenitor cell lines. PNAS, USA 80:2931-2935, 1983.

83. Antman K, Corson J, Greenberger JS, Sytkowski A, vawter G, Weinstein L. Malignant mesothelioma following radiation exposure. J Clin Oncol, 1:695-700, 1983.

84. Greenberger JS, Eckner RJ, Sakakeeny M, Cohen G. Role of stromal and hematopoietic stem cells in Friend spleen focus forming virus effects in continuous bone marrow culture. Leukemia Res, 7:621 636, 1983.

85. Newburger PE, Speir C, Stock JL, Perrine SP, Greenberger JS. Chediak-Hiagashi syndrome: Studies in long-term bone marrow culture. Exp Hematol, 13:117-122, 1985.

86. Wilson AE, Antman KH, Brodsky G, Greenberger JS. Tumor cell heterogenicity in soft tissue sarcomas defined by chemo-radiotherapy. Cancer, 53:1420-1425, 1984.

87. Greenberger JS, Sakakeeny MA, Davis LM, Moloney WC, Reid D. Biologic properties of factor independent nonadherent hematopoietic and adherent preadipocyte cell lines derived from continuous bone marrow cultures. Leukemia Res, 8:363-375, 1984.

88. Antman K, Amato D, Wood W, Price K, Corson J, Suit H, Proppe K, Carey R, Greenberger JS, Wilson R. Impact of patient and physician refusal of randomization of otherwise eligible patients on the results of a clinical trial. J Clin Oncol, 3:1142-1147, 1985.

89. Antman K, Suit H, Amato D, Corson J, Wood W, Proppe K, Harman R, Carey R, Greenberger JS, Blum R, Wilson R. Preliminary results of a randomized trial of adjuvant adriamycin for sarcoma: Lack of apparent difference between treatment groups. J Clin Oncol 2:601-608, 1984.

90. Greenberger JS, Klassen V, Kase K, Sakakeeny MA. Effects of low-dose-rate irradiation on plateau phase bone marrow stromal cells *in vitro*: Demonstration of a new form of nonlethal physiologic alteration of support of hematopoietic stem cells. Int J Rad Oncol Biol Phys, 10:1027-1037, 1984.

91. DeFabritiis P, Bregni M, Lipton J, Greenberger J, Nadler L, Rothstein L, Korbling M, Ritz J, Bast RC, Jr. Elimination of clonogenic Burkett's lymphoma cells from human bone marrow using 4 hydroperoxycyclophosphamide (4-HC) in combination with monoclonal antibodies and complement. Blood, 65:1064-1070, 1985.

92. Greenberger JS, Krensky AM, Messner H, Burakoff SJ, Wandl U, Sakakeeny MA. Production of colony-stimulating factor(s) for granulocyte-macrophage and multipotential (granulocyte/erythroid/megakaryocyte/macrophage) (CFU-GEMM) hematopoietic progenitor cells by clonal lines of human IL-2 dependent T-lymphocytes. Exp Hematol, 12:720-727, 1984.

93. Kluge NK, Ostertag W, Fusco A, Pennie S, Greenberger JS. Multipotential hemopoietic cell lines isolated from stem cell cultures infected with Friend virus complex (MuLV + F-SFFV) show presence of MuLV but not F-SFFV. Leuk Res, 10:187-193, 1986.

94. Greenberger JS, Rothstein L, DeFabritiis P, Bregni M, Bast RC, Jr., Ritz J, Nadler LM, Lipton JM, Sakakeeny MA. Effects of monoclonal antibody and complement treatment of human marrow on hematopoiesis in continuous bone marrow culture. Cancer Res, 45:758-767, 1985.

95. Greenberger JS, Humphries RK, Messner H, Sakakeeny MA. Molecularly cloned and expressed murine T-cell gene product with multipotential CSF properties is biologically similar to Interleukin-3. Exp Hematol, 13:249-260, 1985.

96. Rothstein L, Pierce JH, Aaronson SA, Greenberger JS. Amphotropic retrovirus vector transfer of the v-ras oncogene into human hematopoietic and stromal cells in continuous bone marrow culture. Blood, 65:744-752, 1985.

97. Greenberger JS, Palaszynski EW, Pierce JH, Sakakeeny MA, Ruscetti SK, Ihle JM, Daugherty C, Aaronson SA. Biologic effects of prolonged L-Phenylalanine mustard treatment of murine long-term bone marrow cultures and IL-3 dependent hematopoietic progenitor cell lines. J Nat Canc Inst, 74:247-262, 1985.

98. Bregni M, DeFabritiis P, Raso V, Greenberger JS, Lipton J, Nadler L, Rothstein L, Ritz J, Bast RC, Jr. Elimination of clonogenic tumor cells from human bone marrow using a combination of Ricin-A chain monoclonal antibody conjugate. Cancer Res, 46:1208-1213, 1986.

99. Naparstek E, Donnelly T, Kase K, Greenberger JS. Biologic effects of *in vitro* x-irradiation of murine long-term bone marrow cultures on the production of granulocyte-macrophage colony stimulating factors. Exp Hematol, 13:701-708, 1985.

100. FitzGerald TJ, Rothstein L, Kase K, Greenberger JS. Radiosensitivity of human bone marrow granulocyte-macrophage progenitor cells: Effect of dose rate on purified target cell populations. Radiat Res, 107:205-215, 1986.

101. FitzGerald TJ, Kase K, Daugherty C, Rothstein L, Greenberger JS. Effect of x-irradiation dose rate on the clonogenic survival of human and experimental animal hematopoietic tumor cell lines: Evidence for heterogeneity. Int J Rad Oncol Biol Phys, 12:69-73, 1986.

102. Greenberger JS, Pechenik J, Gould L, Lord A, Kase K, FitzGerald TJ. X-irradiation effects on growth and metamorphosis of gastropod larvae (Crepidula fornicata): A model for environmental radiation teratogenesis. Archiv Env Contam and Toxicology, 15:227-234, 1986.

103. Naparstek E, Donnelly T, Shadduck R, Wagner K, Kase KR, Greenberger JS. Persistent production of granulocyte-macrophage colony-stimulating factor (CSF-1) by cloned bone marrow stromal cell line D2XRII after x-irradiation. J Cellular Physiol, 126:407-417, 1986.

104. Naparstek E, Pierce J, Metcalf D, Shadduck R, Ihle J, Leder A, Sakakeeny MA, Wagner K, Falco J, FitzGerald TJ, Greenberger JS. Induction of growth alterations in factor-dependent hematopoietic progenitor cell lines by cocultivation with irradiated bone marrow stromal cell lines. Blood, 67:1395 1403, 1986.

105. Naparstek E, Wagner K, Ihle JN, Harrison D, Greenberger JS. Hematopoietic effects of continuous intravenous infusion of mice with growth factors produced by the WEHI-3 cell line. Acta Hematol, 77:1-5, 1987.

106. FitzGerald TJ, Rothstein LA, Daugherty C, McKenna M, Kase K, Greenberger JS. The activated human n-ras oncogene enhances x-irradiation repair of mammalian cells *in vitro* less effectively at low-dose-rate: Implications for increased therapeutic ratio of low-dose-rate irradiation. Am J Clin Oncol: Clinical Trials, 8:517-522, 1985.

107. Hardy CL, Kishimoto T, Harjes K, Tavassoli M, Greenberger JS. Homing of a cloned multipotential stem cell line in hemopoietic tissues. Exp Hematol, 14:636-642, 1986.

108. Naparstek E, FitzGerald TJ, Sakakeeny MA, Klassen V, Pierce JH, Woda B, Falco J, Fitzgerald S, Nizin P, Greenberger JS. Induction of malignant transformation of cocultivated hematopoietic stem cells by x-irradiation of murine bone marrow stromal cells *in vitro*. Cancer Res, 46:4677-4684, 1986.

109. Greenberger JS. Future directions in clinical bone marrow transplantation: Interests coverage on the bone marrow microenvironment. Br J Hematol, 62:603-605, 1986.

110. Greenberger JS, Daugherty C, Sakakeeny MA, Braun J, Pierce J, Eckner J, FitzGerald TJ. Friend virus-infected long-term bone marrow cultures produce colony stimulating factor-dependent and independent granulocyte-macrophage progenitor cells for over four years *in vitro*. Leukemia Res, 11:51 61, 1987.

111. Naparstek E, Anklesaria P, FitzGerald TJ, Sakakeeny MA, Greenberger JS. Morphology of cell to-cell contact between x-irradiated plateau phase bone marrow stromal cell lines and cocultivated factor dependent cell lines leading to leukemogenesis *in vitro*. S.E.M., 1(1):247-253, 1987.

112. Anklesaria P, Klassen V, Sakakeeny MA, FitzGerald TJ, Rybak ME, Greenberger JS. Biological characterization of cloned permanent stromal cell lines from anemic Sl/Sld and +/+ littermates. Exp Hematol, 15:636-644, 1987

113. Anklesaria P, Holland C, Klassen V, Sakakeeny MA, FitzGerald TJ, Greenberger JS. Expression of a selectable gene transferred by retroviral vector to hematopoietic stem cells and stromal cells in murine continuous bone marrow cultures. Exp Hematol, 5:195-202, 1987.

114. McIntyre KW, Natuk RJ, Byron CA, Kase K, Greenberger JS, Welsh RM. Blastogenesis and proliferation of large granular lymphocytes in non-lymphoid organs. J Leukocyte Biol, 43:492-501, 1988.

115. Greenberger JS, FitzGerald TJ, Kleasen V, Anklesaria P, Bushnell D, Kase K, Sakakeeny MA. Alteration in hematopoietic stem cell seeding and proliferation by low-dose-rate irradiation of bone marrow stromal cells *in vitro*. Int J Rad Oncol Biol Phys, 14:85-94, 1988.

116. Holland CA, Anklesaria PN, Sakakeeny MA, Greenberger JS. Enhancer sequences of a rew retroviral vector augment expression of a gene transferred to multipotent hematopoietic progenitors. PNAS, USA, 84:8662-8666, 1987.

117. Anklesaria P, Kase KR, Glowacki J, Holland CH, Sakakeeny MA, Wright JH, FitzGerald TJ, Lee C-YL, Greenberger JS. Engraftment of a clonal bone marrow stromal cell line *in vivo* stimulates hematopoietic recovery from total body irradiation. PNAS, USA 84:7681-7685, 1987.

118. Ohta Masatsugu, Greenberger Joel S, Anklesaria Pervin, Bassols Anna, Massague Joan. Two forms of transforming growth factor-β distinguished by multipotential haematopoietic progenitor cells. Nature, 329:539-541, 1987.

119. Wollin M, FitzGerald TJ, Menon M, Longcope C, Reale F, Carlson J, Sakakeeny MA, Holland C, Greenberger JS. Radiation survival characteristics of prostatic carcinoma cell lines PC-3 and DU-145 after continuous administration of androgen or estrogen. Radiation Therapy & Oncol, 15:285-293, 1989.

120. Ohta M, Anklesaria P, FitzGerald TJ, Kase K, Leif J, Delamarter J, Farber N, Wright E, Greenberger JS. Long-term bone marrow cultures: Recent studies with clonal hematopoietic and stromal cell lines. Path & Immunopath Res, 8:1-20, 1989.

121. Bently A, Kirby L, Anklesaria P, Greenberger JS. Bone marrow stromal proteoglycan heterogeneity: Phenotypic variability between cell lines and the effects of glucocorticoid. J Cell Physiol, 136:182-187, 1988.

122. Pierce J, Ruggiero M, Fleming TP, DiFiore PP, Greenberger JS, Schlessinger J, Rovera G, Aaronson S. Signal transduction through the EGF receptor transfected into Interleukin-3 dependent hematopoietic cells. Science, 239:628-631, 1988.

123. Holland CA, Chada S, Wright J, Whitney C, Harigaya K, Greenberger JS, Newburger PE. Differentiation of human hematopoietic cells significantly increases expression of a gene transferred by a retroviral vector. J. Leukocyte Biol, 46:221-229, 1989.

124. FitzGerald TJ, Santucci MA, Harigaya K, Woda B, McKenna M, Sakakeeny MA, Pierce JH, Kase K, Holland CA, Greenberger JS. Radiosensitivity of permanent human bone marrow stromal cell lines: Effect of dose-rate. Int J Rad Oncol Biol Phys, 15:1153-1159, 1988.

125. FitzGerald TJ, Anklesaria P, Le D, Sakakeeny MA, Kase K, Greenberger JS. Radiosensitivity of cloned permanent murine bone marrow stromal cell lines: Non-uniform effect of low-dose-rate. Exp Hematol, 16:820-827, 1988.

126. Cheifetz S, Bassols A, Stanley K, Ohta M, Greenberger JS, Massague J. Heterodimeric transforming growth Factor-ß. Biologic properties and interaction with three types of cell surface receptors. J Biochem, 263:10783-10789, 1988.

127. Greenberger JS, Anklesaria P. Recent studies of the hematopoietic microenvironment in long-term bone marrow cultures. Immunologic Res, 8:226-235, 1989.

128. Holland CA, Rothstein L, Sakakeeny MA, Anklesaria P, Griffin JD, Karigaya K, Newburger P, Greenberger JS. Differential expression of the neomycin resistance gene transferred by a retroviral vector to hematopoietic and stromal cells in human continuous bone marrow cultures. Acta Hematol, 82:136-143, 1989.

129. Ohta M, Anklesaria P, Wheaton M, Ohara A, Pierce JH, Holland CA, Greenberger JS. Retroviral src gene expression in continuous marrow culture increases the self-renewal capacity of multilineage hematopoietic stem cells. Leuk, 3:206-226, 1989.

130. FitzGerald TJ, Henault S, Santucci MA, Anklesaria P, Zak S, Kase K, Farber N, Greenberger JS. Increase in low-dose-rate x-irradiation resistance of factor dependent hematopoietic progenitor cells by recombinant murine GM-CSF. Int J Rad Oncol, Biol & Phys, 17:323-335, 1989.

131. Enver T, Nakamoto B, Karlinsey J, Josephson B, Greenberger J, Papayannopoulou T. Erythropoietin changes the globin program of an IL-3-dependent multipotential cell line. PNAS, USA 85:9091-9095,1988.

132. Varnum BC, Lim RW, Kaufman SE, Gasson JC, Greenberger JS, Herschman HR. Granulocyte macrophage colony-stimulating factor induces a unique pattern of primary response TIS genes in both proliferating and terminally differentiated myeloid cells. Molecular & Cellular Biol, 9:3580-3583, 1989.

133. Anklesaria P, FitzGerald TJ, Kase K, Ohara A, Bentley S, Greenberger JS. Improved hematopoiesis in anemic Sl/Sl$^{d}$ mice by therapeutic transplantation of a hematopoietic microenvironment. Blood, 74:1144-1152, 1989.

134. Greenberger JS. Ras mutations in human leukemia and related disorders. J Cell Cloning, 7:343 359, 1989.

135. Matsui T, Pierce JH, Fleming TP, Greenberger JS, LaRochelle WJ, Ruggiero M, Aaronson SA. Independent expression of human A or B PDGF receptor cDNAs in a naive hematopoietic cell leads to functional coupling with mitogenic and chemotactic signaling pathways. PNAS, USA, 86:8314-8319, 1989.

136. FitzGerald TJ, Henault S, Sakakeeny MA, Santucci MA, Pierce JH, Anklesaria P, Kase K, Lovington K, Greenberger JS. Resistance of hematopoietic stem cells to x-irradiation at clinical low-dose-rate is induced by several classes of oncogenes. Radiat Res, 122:44-53, 1990.

137. Greenberger JS, Wright E, Henault S, Sakakeeny MA, Anklesaria P, FitzGerald TJ, Wheaton M, Kase K, Kuzawa D. Hematopoietic stem cell and marrow stromal cell specific requirements for gamma irradiation leukemogenesis *in vitro*. Exp Hematol, 18:408-416, 1990.

138. Santucci MA, FitzGerald TJ, Harigaya K, Woda B, Sakakeeny MA, Anklesaria P, Kase K, Holland CA, Greenberger JS. Gamma-irradiation response of cocultivated bone marrow stromal cell lines of differing intrinsic radiosensitivity. Int J Rad Oncol Biol & Phys, 18:1083-1092, 1990.

139. Anklesaria P, Teixido J, Laiho M, Pierce J, Greenberger JS, Massague J. Cell homing and proliferation mediated by membrane TGF-α binding to EGF receptor. PNAS, USA, 87:3289-3293, 1990.

140. Bentley SA, Kirby SL, Anklesaria PA, Greenberger JS. Biochemical and functional characterization of proteoglycans produced by Sl/Sl$^{d}$ murine bone marrow stromal cell lines. J Cell Physiol, 145:53-59, 1990.

141. Recht L, Fram RJ, Strauss G, FitzGerald TJ, Liepman M, Lew R, Kadish S, Sherman D, Wilson J, Greenberger J, Egan P, Silver D. Preirradiation chemotherapy of supratentorial malignant primary brain tumors with intracarotid cis-Platinum (CDDP) and I.V. BCNU: A phase II trial. Am J Clin Oncol (CCT) 13(2):125-131, 1990.

142. FitzGerald TJ, Santucci MA, Das IJ, Kase K, Pierce JH, Greenberger, JS. The *v-abl*, *c-fms*, or *v-myc* oncogene induce radiation resistance of hematopoietic progenitor cell line 32D cl 3 at clinical low-dose-rate. Int J Rad Oncol, Biol, Phys, 21:1203-1210, 1991.

143. Anklesaria P, Greenberger JS, FitzGerald TJ, Wicha M, Campbell A. Reduced expression of haemonectin may contribute to the defective hematopoiesis of Steel mutant mice. Blood, 77:1691-1698, 1991.

144. Miyake K, Weissman IL, Greenberger JS, Kincade PW. Evidence for a role of the integrin VLA-4 and a possible ligand in lymphohemopoiesis. JExp Med, 173:599-607, 1991.

145. Greenberger JS. Toxic effects on the hematopoietic microenvironment. Exp Hematol, 19:1101 1109, 1991.

146. Crawford DR, Greenberger JS. Active oxygen transforms murine myeloid progenitor cells at cytotoxic concentrations. Int J Cancer, 49:744-749, 1991.

147. Ruggiero M, Casamassima F, Magnelli L, Pacini S, Pierce JH, Greenberger JS, Chiarugi VP. Mitogenic signal transduction: A common target for oncogenes that induce resistance to ionizing radiations. Biochem/Biophys Res Proc, 183:652-658, 1992.

148. Greenberger JS. Radiation therapy in children: continued need to assess risk versus gain. Int J Rad Oncol Biol Phys, 23:675-676, 1992.

149. Santucci MA, Anklesaria P, Das I, FitzGerald TJ, Valinski H,Anderson SM, Kase K, Sakakeeny MA, Greenberger JS. The v-src oncogene may not be responsible for the increased radioresistance of v src-infected hematopoietic progenitor cells. Radiat Res, 129:297-303, 1992.

150. Bleiberg I, Greenberger J, Anklesaria P, Glowacki J. Origin of stromal cells associated with osteoclast recruitment in subcutaneous implants of bone particles in chimeric mice. Exp Hematol, 20:957 962, 1992.

151. Greenberger JS, Leif J, Crawford D, Anklesaria P, English D, Sakakeeny MA, Rubin JR, Pierce PH, Shadduck RK, FitzGerald TJ. Humoral and cell surface interactions during gamma-irradiation leukemogenesis *in vivo*. Exp Hematol, 20:92-102, 1992.

152. Ohara A, Anklesaria P, Schultz L, Greenberger JS. Biological characterization of permanent clonal bone marrow stromal cell lines derived from "moth-eatn" $Me^{v}/Me^{v}$ and SCID mice. J Cell Cloning, 10(1):33-47, 1992.

153. Greenberger JS. Is the marrow stroma of AML patients a "leukemic" stroma? Exp Hematol, 20:1041-1042, 1992.

154. Greenberger JS, Sakakeeny M, Leif J, Anklesaria P, Pierce JH, Shadduck RK. Expression of M-CSF and its receptor (*c-fms*) by factor dependent hematopoietic progenitor cell lines evolving from cocultivation with gamma irradiated marrow stromal cell lines. Leukemia, 6:626-633, 1992.

155. Teixido J, Hemler ME, Greenberger JS, Anklesaria P. Role of ß1 and ß2 integrins in the adhesion of human $CD34+^{hi}$ stem cells to bone marrowstroma. J Clin Invest, 90:358-367, 1992.

156. Gimble J, Youkhana K, Hua X, Wang C-S, Bass H, Medina K, Greenberger JS. Adipogenesis in a myeloid supporting bone marrow stromal cell line. J. Cell Biochem, 50:73-82, 1992.

157. Naparstek E, Ohara M, Greenberger JS, Slavin S. Continuous intravenous administration of rmGM-CSF enhances immune as well as hematopoietic reconstitution following syngeneic bone marrow transplantation in mice. Exp Hematol 21:131-137, 1993.

158. Neben S, Anklesaria P, Greenberger JS, Mauch P. Quantitation of murine hematopoietic stem cells *in vitro* by limiting dilution analysis of cobblestone area formation on a clonal stromal cell line. Exp Hematol, 21:438-444, 1993.

159. Santucci MA, Anklesaria P, Laneuville P, Das IJ, Sakakeeny MA, FitzGerald TJ, Greenberger JS. Expression of $p210^{bcr/abl}$ increases hematopoietic progenitor cell radiosensitivity. Int J Rad Onc Biol & Phys, 26:831-836, 1993.

160. Romanik EA, Leif J, Sakakeeny MA, Greenberger JS. Sequence analysis of mutational hot spots in the endogenous and transfected CSF-1 receptor in gamma-irradiation induced factor-independent subclones of clonal hematopoietic progenitor cell lines. Radiat Oncol Invest: Clinical & Basic Res, 1(2):94-102, 1993.

161. Liggett W, JRr., Shevde N, Anklesaria P, Sohoni S, Greenberger J, Glowacki J. Effects of macrophage colony stimulating factor and granulocyte-macrophage colony stimulating factor on osteoclastic differentiation of hematopoietic progenitor cells. Stem Cells, 11:398-411, 1993.

162. Santucci MA, Holland, CA, Anklesaria P, Das IJ, FitzGerald TJ, McKenna MG, Sakakeeny MA, Greenberger JS. Expression of the transcriptional activator tax protein of HTLV-I increases the radiosensitivity of a mouse fibroblast cell line to ionizing irradiation. Rad Oncol Invest; Clinical & Basic Res, 1:131-136, 1993.

163. Sakakeeny MA, Leif J, Harrington M, Merrill W, Pratt D, Romanik E, McKenna M, FitzGerald TJ, Greenberger JS. Effects of gamma-irradiation on the M-CSF promoter linked to a

chloramphenicol aminoacyl transferase reporter gene expressed in a clonal murine bone marrow stromal cell line. Stem Cells, 12(1):87-94, 1994.

164. Shevde N, Anklesaria P, Greenberger JS, Bleiberg I, Glowacki J. Evidence for direct or stromal cell-mediated stimulation of osteoclastogenesis. Proc. Soc. Exp. Biol. Med, 205:306-316, 1994.

165. Liggett WH, Jr., Lian JB, Greenberger JS, Glowacki J. Osteocalcin promotes differentiation of putative osteoclast progenitors from murine long-term bone marrow cultures. J Cell Biochem, 56:190 199, 1994.

166. Santucci MA, Pierce JH, Anklesaria P, Fortuna A, Frezza G, Babini L, Greenberger JS. Erythropoietin acts as a radioprotector on purehematopoietic progenitor cells expressing the cognate receptor. Stem Cells, 12:506-513, 1994.

167. Epperly M, Santucci MA, Reed J, Shields D, Halloran A, Greenberger JS. Expression of the human Bcl-2 transgene increases the radiation resistance of a hematopoietic progenitor cell line. Rad Oncol Invest: Basic & Clinical Res, 2:77-84, 1994.

168. Pacini S, Santucci MA, Milano F, Casamassima F, Greenberger JS, Pierce JH, Ruggiero M. Increased formation of diacylglycerol in tumor cells that are resistant to ionizing radiations. Rad Oncol Invest; Basic & Clinical Res, 2:20-25, 1994.

169. Pogue-Geile KL, Sakakeeny MA, Panza JL, Sell SL, Greenberger JS. Cloning and expression of unique murine macrophage colony stimulating factor transcripts. Blood, 85:3478-3486, 1995.

170. Mauch P, Constine L, Greenberger JS, Knospe W, Sullivan J, Liesveld JL, Deeg HJ. Hematopoietic stem cell compartment: acute and late effects of radiation therapy and chemotherapy. Int J Rad Oncol Biol Phys,31(5):1319-1339, 1995.

171. Epperly MW, Berry LA, Halloran A, Greenberger JS. Inhibition of $G_1$ phase arrest induced by ionizing radiation in hematopoietic cells by overexpression in genes involved in the $G_1$/S phase transition. Radiat Res, 143:245-254, 1995.

172. Rosenstein M, Epperly MW, Hughey R, Prezioso J, Greenberger JS. Overexpression of the gamma glutamyltranspeptidase transgene does not alter the gamma irradiation sensitivity of the IB3-1 normal bronchoepithelial or A549 human lung carcinoma cell line. Rad Oncol Invest: Clinc & Basic Res, 3(1):9-16, 1995.

173. Santucci MA, Greenberger JS, Ruggiero M, Pierce JH, Babini L, Barbieri E, Pacini S, Berti A, Raugei G, Ramponi G. Fibroblast cell-specific increase in radiosensitivity by overexpression of the transgene for a synthetic phosphotyrosine protein phosphatase. Rad Oncol Invest: Clinc & Basic Res, 4:1-8, 1996.

174. Greenberger JS, Kalend A, Sciurba F, Jett J, Landreneau R, Belani C. Development of multifield three-dimensional conformal radiotherapy of lung cancer using a total lung dose/volume histogram. Rad Oncol Invest: Clinc & Basic Res, 3:243-255, 1996.

175. Greenberger JS, Anderson J, Berry LA, Epperly MW, Cronkite EP, Boggs SS. Effects of irradiation of CBA/Ca mice on hematopoietic stem cells and stromal cells in long-term bone marrow cultures. Leukemia, 10(3):514-527, 1996.

176. Jahroudi N, Ardekani AM, Greenberger JS. Ionizing irradiation increases transcription of the vWF gene in endothelial cells. Blood, 88(10):3801-3814, 1996.

177. Greenberger JS, Epperly MW, Zeevi A, Brunson KW, Goltry KL, Pogue-Geile KL, Bray J, Berry LA. Stromal cell involvement in leukemogenesis and carcinogenesis. *In vivo*, 10:1-18, 1996.

178. Greenberger JS, Epperly MW, Jahroudi N, Pogue-Geile KL, Berry LA,Bray J, Goltry KL. Role of bone marrow stromal cells in irradiationleukemogenesis. Acta Hematol, 96:1-15, 1996.

179. Jahroudi N, Ardekani AM, Greenberger JS. An NF1-like protein functions as repressor of vWf promoter. J. Biol. Chem., 271(35):21413-21421, 1996.

180. Faul C, Kounelis S, Karasek K, Papadaki H, Greenberger JS, Jones MW. Small cell carcinoma of the uterine cervix: overexpression of p53, Bcl-2 and CD44. Int J Gyn Cancer, 6:369-375, 1996.

181. Goff JP, Shields DS, Petersen BE, Zajac VF, Michalopoulos GK, Greenberger JS. Synergistic effects of hepatocyte growth factor on human cord blood CD34+ progenitor cells are the result of Met receptor expression. Stem Cells, 14:592-602, 1996.

182. Goff JP, Shields DS, Boggs SS, Greenberger JS. Effects of recombinant cytokines on colony formation by irradiated human cord blood CD34+ hematopoietic progenitor cells. Radiat Res, 147:61-69, 1997.

183. Emami S, Merrill W, Kirchgesser M, Appel JM, Levine PH, Greenberger JS, Hurwitz DR. Enhanced growth of canine bone marrow stromal cultures in the presence of acidic fibroblast growth factor and heparin. *In vitro* Cell Dev Biol Anim, 33:503-511, 1997.

184. Hurwitz DR, Galanopoulos T, McGrath CA, Merrill W, Kirchgesser M, Hansen M, Emami S, Bizinkauskas CB, Levine PH, Greenberger JS. Systemic delivery of human growth hormone and human factor IX in dogs by re-introduced genetically modified autologous bone marrow stromal cells. Human Gene Therapy, 8:137-156, 1997.

185. Balk ML, Bray J, Day C, Epperly M, Greenberger JS, Evans CH, Niyibize C. Effect of rhBMP-2 on the osteogenic potential of bone marrow stromal cells from an osteogenesis imperfecta mouse (*oim*). Bone, 21(1):7-15, 1997.

186. Petersen BE, Goff JP, Greenberger JS, Michalopoulos GK. Hepatic oval cells express the hematopoietic stem cell marker Thy-1 in the rat. Hepatology, 27:433-445, 1998.

187. Glowacki J, Mizuno S, Wang J, Greenberger JS. Perfusion enhances functions of bone marrow stromal cells in three-dimensional culture. Cell Transplant, 7:319-326, 1998.

188. Pogue-Geile KL. Gott JA. Greenberger JS. The role of intracisternal A-type particles in the evolution of factor-independent murine hematopoietic cell lines. Leukemia. 12(1):4-12, 1998.

189. Epperly, MW, Bray JA, Kraeger S, Zwacka R, Engelhardt J, Travis E, Greenberger JS. Prevention of late effects of irradiation lung damage by manganese superoxide dismutase gene therapy. Gene Therapy, 5:196-208, 1998.

190. Goltry KL, Epperly, MW, Greenberger JS. Induction of serum amyloid A inflammatory response genes in irradiated bone marrow cells. Radiat. Res., 149(6):570-578, 1998.

191. Greenberger JS, Bahri S, Jett J, Belani C, Kalend A, Epperly MW. Considerations in optimizing radiation therapy for non-small cell lung cancer. (International Symposium on Thoracic Malignancies). Chest, 113(1):465-525, 1998.

192. Cherington V, Chiang GG, McGrath CA, Natale A, Galanopoulos T, Merrill W, Bisinkauskas C, Hansen M, Sobolewski J, Levine PH, Greenberger JS, Hurwitz DR. Retroviral vector modified bone marrow stromal cells secrete biologically active factor IX *in vitro* and deliver therapeutic levels of factor IX to the plasma of dogs following reinfusion. Human Gene Therapy, 9:1397-1409, 1998.

193. Zwacka RM, Dudus L, Epperly MW, Greenberger JS, Engelhardt JF. Redox gene therapy protects human IB-3 lung epithelial cells against ionizing radiation-induced apoptosis. Human Gene Therapy, 9:1381-1386, 1998.

194. Epperly MW, Bray JA, Krager S, Berry LA, Gooding W, Engelhardt JF, Zwacka R, Travis EL, Greenberger JS. Intratracheal injection of adenovirus containing the human MnSOD transgene protects athymic nude mice from irradiation-induced organizing alveolitis. Int. J. Radiat. Oncol. Phys. 43(1):169 181, 1999.

195. Jahroudi N, Kitney J, Greenberger JS, Bowser R. Endothelial cell dysfunction in response to intracellular overexpression of amyloidprecursor protein. J. Neuroscience Res., 54:828-839, 1998.

196. Goff JP, Shields DS, Greenberger JS. The influence of cytokines on the growth kinetics and immunophenotype of daughter cells resulting from the first division of single CD34+thy-1+lin- cells. Blood, 92(11):4098-4107, 1998.

197. Chiang GG. Rubin HL. Cherington V. Wang T. Sobolewski J. McGrath CA. Gaffney A. Emami S. Sarver N. Levine PH. Greenberger JS. Hurwitz DR. Bone marrow stromal cell-mediated gene therapy for hemophilia A: *in vitro* expression of human factor VIII with high biological activity requires the inclusion of the proteolytic site at amino acid 1648. Human Gene Therapy. 10(1):61-76, 1999.

198. Ardekani AM, Greenberger JS, Jahroudi, N. Endothelial specific activity of the vWf promoter is regulated by two repressor elements. J. Thrombosis & Hemostasis, 80:488-494, 1998.

199. Guo X-YD, Cuillerot J-M, Wang T, Wu Y, Arlinghaus R, Claxton D, Bachier C, Greenberger JS, Colombowala I, Deisseroth AB. Peptide containing the BCR oligomerization domain (AA 1-160) reverses the transformed phenotype of p210 $^{bcr-abl}$ positive 32D myeloid leukemia cells. Oncogene, 17:825-833, 1998.

200. Petersen BE, Bowen WC, Patrene KD, Mars WM, Sullivan AK, Boggs SS, Greenberger JS, Goff JP. Bone marrow as a potential source of hepatic oval cells. Science, 284:1168-1170, 1999.

201. Epperly MW, Bray JA, Carlos TM, Prochownik E, Greenberger JS. Biology of marrow stromal cell lines derived from long-term bone marrow cultures of Trp53-deficient mice. Radiat. Res., 152:29-40, 1999.

202. Guo XYD, Balague C, Wang T, Randhawa G, Yuan Z, Bachier C, Greenberger JS, Arlinghaus R, Kufe D, Deisseroth AB. The presence of the RB *c-box* peptide in the cytoplasm inhibits p210 $^{bcr/abl}$ transforming function. Oncogene, 18:1589-1595, 1999.

203. Epperly MW, Travis EL, Sikora C, Greenberger JS. Magnesium superoxide dismutase (MnSOD) plasmid/liposome pulmonary radioprotective gene therapy: Modulation of irradiation-induced mRNA for IL-1, TNF-α, and TGF-ß correlates with delay of organizing alveolitis/fibrosis. Biology of Blood and Marrow Transplantation, 5:204-214, 1999.

204. Epperly MW, Bray JA, Esocobar P, Bigbee WL, Watkins S, Greenberger JS. Overexpression of the human MnSOD transgene in subclones of murine hematopoietic progenitor cell line 32D cl 3 decreases irradiation-induced apoptosis but does not alter $G_2$/M or $G_1$/S phase cell cycle arrest. Radiat. Oncol. Invest. Clinical & Basic Res., 7:331-342, 1999.

205. Stickle RL, Epperly MW, Klein E, Bray JA, Greenberger JS. Prevention of irradiation-induced esophagitis by plasmid/liposome delivery of the human manganese superoxide dismutase (MnSOD) transgene. Radiat. Oncol. Invest. Clinical & Basic Res., 7(6):204-217, 1999.

206. Bahri S, Flickinger JC, Kalend A, Deutsch M, Belani C, Sciurba F, Luketich J, Greenberger JS. Results of multifield conformal radiation therapy of non-small cell lung carcinoma using multileaf collimation beams. Radiat. Oncol. Invest: Clin & Basic Res, 7:297-308, 1999.

207. Remy-Martin JP. Marandin A. Challier B. Bernard G. Deschaseaux M. Herve P. Wei Y. Tsuji T. Auerbach R. Dennis JE. Moore KA. Greenberger JS. Charbord P. Vascular smooth muscle differentiation of murine stroma: a sequential model. Exp. Hematol, 27(12):1782-1795, 1999

208. Pogue-Geile KL, Greenberger JS. The effect of the irradiated microenvironment on the expression and retrotransposition of intracisternal type A particles in hematopoietic cells. Exp. Hematol., 1(28):680 689, 2000.

209. Gorbunov NV, Pogue-Geile KL, Epperly MW, Bigbee WL, Draviam R, Day BW, Wald N, Watkins SC, Greenberger JS. Activation of the nitric oxide synthase 2 pathway in the response of bone marrow stromal cells to high doses of ionizing radiation. Radiat Res, 154: 73-86, 2000.

210. Epperly MW, Sikora C, Defilippi S, Bray J, Koe G, Liggitt D, Luketich JD, Greenberger JS. Plasmid/liposome transfer of the human manganese superoxide dismutase (MnSOD) transgene prevents ionizing irradiation-induced apoptosis in human esophagus organ explant culture. Int. J. Cancer (Radiat Oncol Invest.), 90(3):128-137, 2000.

211. Epperly MW, Defilippi S, Sikora C, Gretton J, Kalend K, Greenberger JS. Intratracheal injection of manganese superoxide dismutase (MnSOD) plasmid/liposomes protects normal lung but not orthotopic tumors from irradiation. Gene Ther, 7(12):1011-1018, 2000.

212. Epperly MW, Epstein CJ, Travis EL, Greenberger JS. Decreased pulmonary radiation resistance of manganese superoxide dismutase (MnSOD)-deficient mice is corrected by human manganese Superoxide dismutase-plasmid/liposome (SOD2-PL) intratracheal gene therapy. Radiation Res., 154(4):365-374, 2000.

213. Epperly MW, Gretton JA, DeFilippi SJ, Sikora CA, Liggitt D, Koe G, Greenberger JS. Modulation of radiation-induced cytokine elevation associated with esophagitis and esophageal stricture by manganese superoxide dismutase-plasmid/liposome (SOD-PL) gene therapy. Radiat. Res., 155:2-14, 2001.

214. Epperly MW, Travis EL, Whitsett JA, Epstein CJ, Greenberger JS. Overexpression of manganese superoxide dismutase (MnSOD) in whole lung or alveolar type II (AT-II) cells of MnSOD transgenic mice does not provideintrinsic lung irradiation protection. Radiat. Oncol. Invest., 96:11-21,2001.

215. Greenberger JS, Kagan VE, Pearce L, Boriseniao G, Tyurina Y, and Epperly MW. Modulation of redox signal transduction pathways in the treatment of cancer. Antioxidants Redox Signaling, 3(3):347-359, 2001.

216. Pearce LL, Epperly MW, Greenberger JS, Pitt B, Peterson J. Identification of respiratory complexes I and III as mitochondrial sites of damage following exposure to ionizing radiation and nitric oxide. Nitric Oxide: Biology and Chemistry, 5(2):128-136, 2001.

217. Epperly MW, Kagan VE, Sikora CA, Gretton JE, Defilippi SJ, Bar-Sagi D, Greenberger JS. Manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) administration protects mice from esophagitis associated with fractionated irradiation. Int. J. Cancer (Radiat. Oncol. Invest.), 96(4):221-233, 2001.

218. Epperly MW, Sikora CA, DeFilippi SJ, Gretton JE, Bar-Sagi D, Carlos T, Guo HL, Greenberger JS. Pulmonary irradiation-induced expression of VCAM-1 and ICAM-1 is decreased by MnSOD-PL gene therapy. Biol. Blood Bone Marrow Transplant. Vol. 8, No. 4:175-187, 2002.

219. Epperly MW, Sikora C, Defilippi S, Gretton J, Zhan Q, Kufe DW, Greenberger JS. Manganese superoxide dismutase (SOD2) inhibits radiation-induced apoptosis by stabilization of the mitochondrial membrane. Radiation Res. 157:568-577, 2002.

220. Deasy BM, Qu-Peterson Z, Greenberger JS, Huard J. Muscle stem cell growth: effect of cytokines on nonexponential proliferation. Stem Cells 2:50-60, 2002.

221. Bhatnagar A, Flickinger JC, Bahri S, Deutsch M, Belani C, Luketich J, Greenberger JS. Update on resutls of multi-field conformal radiation therapy of nonsmall-cell lung carcinoma using multileaf collimated beams. Clin. Lung Cancer, Vol. 3., No. 4, pp. 259-264, 2002.

222. Gorbunov Nikolai V, Morris James E, Greenberger Joel S, Thrall Brian D. Establishment of a novel clonal murine bone marrow stromal cell line for assessment of p53 responses to genotoxic stress. Toxicology 179:257-266, 2002.

223. Kanai AJ, Zeidel ML, Lavelle JP, Greenberger JS, Birder LA, de Groat WC, Apodaca GL, Meyers SA, Ramage R, VanBibber MM, Epperly MW. Manganese superoxide dismutase gene therapy protects against irradiation-induced cystitis. Am. J. of Physiology (Renal Physiology), 44:1152-1160, 2002.

224. Epperly MW, Defilippi S, Sikora C, Gretton J, Greenberger JS. Radioprotection of lung and esophagus by overexpression of the human manganese superoxide dismutase transgene. Military Medicine, 167(1): 071, 2002.

225. Epperly MW, Guo HL, Jefferson M, Wong S, Gretton J, Bernarding M, Bar-Sagi D, Greenberger JS. Cell phenotype specific duration of expression of epitope-tagged HA-MnSOD in cells of the murine lung following intratracheal plasmid liposome gene therapy. Gen Therapy, 10:163-171, 2003.

226. Guo HL, Seixas-Silva JA, Epperly MW, Gretton JE, Shin DM, Greenberger JS. Prevention of irradiation-induced oral cavity mucositis by plasmid/liposome delivery of the human manganese superoxide dismutase (MnSOD) transgene. Radiation Research, 159:361-370, 2003.

227. Guo Hongliang, Epperly Michael W, Bernarding Michael, Nie Suhua, Gretton Joan, Jefferson Mia, and Greenberger Joel S. Manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) intratracheal gene therapy reduction of irradiation-induced inflammatory cytokines does not protect orthotopic lewis lung carcinomas. In Vivo, 17:13-22, 2003.

228. Greenberger JS, Epperly MW, Gretton J, Jefferson M, Nie S, Bernarding M, Kagan V, Guo HL. Radioprotective gene therapy. Current Gene Therapy, 3:183-195, 2003.

229. Brusa G, Benvenuti M, Mazzacurati L, Mancini M, Pattacini L, Martinelli G, Barbieri E, Greenberger JS, Baccarani M, Santucci MA. p53 loss of function enhances genomic instability and accelerates clonal evolution of murine myeloid progenitors expressing the p210BCR-ABL tyrosine kinase. Haematologica/Journal of Hematology, 88(6):628-635, 2003.

230. Epperly MW, Bernarding M, Gretton J, Jefferson M, Nie S, Greenberger JS. Overexpression of the transgene for manganese Superoxide dismutase (MnSOD) in 32D cl 3 cells prevents apoptosis induction by TNF-α, IL-3 withdrawal and ionizing irradiation. Experimental Hematology, 31(6):465-474, 2003.

231. Guo HL, Wolfe D, Epperly MW, Huang S, Liu K, Glorioso JC, Greenberger J, Blumberg D. Gene transfer of human manganese Superoxide dismutase protects small intestinal villi from radiation injury. J. Gastrointest. Surg., 7:229-236, 2003.

232. Epperly MW, Guo HL, Bernarding M, Gretton J, Jefferson M, Greenberger JS. Delayed intratracheal injection of manganese superoxide dismutase (MnSOD)-plasmid/liposomes provides suboptimal protection against irradiation-induced pulmonary injury compared to treatment before irradiation. Gene Ther Mol Biol, 7:61-68, 2003.

233. Epperly MW, Sikora CA, Defilippi S, Gretton JE, Greenberger JS. Bone marrow origin of myofibroblasts in irradiation pulmonary fibrosis. Am. J. Resp. Molecular Cell Biology, 29:213-224, 2003.

234. Epperly MW, Gretton JE, Bernarding M, Nie S, Rasul B, Greenberger JS. Mitochondrial localization of copper/zinc superoxide dismutase (Cu/ZnSOD) confers radioprotective functions *in vitro* and *in vivo*. Radiation Research, 160:568-578, 2003.

235. Deasy BM, Jankowski RJ, Payne TR, Cao B, Goff JP, Greenberger JS, Huard J. Modeling stem cell population growth: Incorporating terms for proliferative heterogeneity. Stem Cells, 21:536-545, 2003.

236. Kanai A, Epperly MW, Pearce L, Birder L, Zeidel M, Meyers S, Greenberger J, deGroat W, Apodaca G, Peterson J. Differing roles of mitochondrial nitric oxide synthase in cardiomyocytes and urothelial cells. Am. J. Physiol. Heart Circ. Physiol. 286:H13-H21, 2004.

237. Epperly MW, Osipov AN, Martin I, Kawai K, Borisenko GG, Jefferson M, Bernarding M, Greenberger JS, Kagan VE. Ascorbate as a "redox-sensor" and protector against irradiation-induced oxidative stress in 32D cl 3 hematopoietic cells and subclones overexpressing human manganese Superoxide Dismutase. IJROBP, 58(3):851-861, 2004.

238. Epperly MW, Hongliang G, Shields D, Zhang X, Flanders K, Lambert P, Greenberger JS. Correlation of ionizing irradiation-induced late pulmonary fibrosis with long-term bone marrow culture fibroblast progenitor cell biology in mice homozygous deletion recombinant negative for endothelial cell adhesion molecules. In Vivo, 18:1-14, 2004.

239. Wolfe D, Wechuck JB, Krisky DM, Goff JP, Goins WF, Ozuer A, Epperly M, Greenberger JS, Fink DJ, Glorioso JC. Delivery of herpes simplex virus-based vectors to stem cells. Methods Mol. Biol., 246:339-52, 2004.

240. Greenberger JS, Epperly MW. Radioprotective antioxidant gene therapy: potential mechanisms of action. Gene Therapy and Molecular Biology (GTMB), 8:31-44, 2004.

241. Greenberger Joel S, Epperly Michael W. Pleiotrophic stem cell and tissue effects of ionizing irradiation protection by MnSOD-plasmid liposome gene therapy. In "Progress in Gene Therapy", Frank Columbus, Ed., Nova Science Publications, pp. 110-118, 2005.

242. Thomas Sufi M, Zeng Qing, Epperly Michael, Gooding William E, Pastan Ira, Greenberger Joel S, Grandis Jennifer Rubin. Abrogation of head and neck squamous cell carcinoma growth by recombinant TGF-α-Pseudomonas exotoxin conjugate PE38. Cancer Research, 10:7079-7087, 2004.

243. Amundson Sally A, Grace Marcy B, McLeland Christopher B, Epperly Michael W, Yeager Andrew, Zhan Qimin, Greenberger Joel S, Fornace Albert J., Jr. Human in vivo radiation-induced biomarkers: gene expression changes in radiotherapy patients. Cancer Research, 64:6368-6371, 2004.

244. Epperly MW, Goff JP, Sikora CA, Shields DS, Greenberger JS. Bone marrow origin of cells with capacity for homing and differentiation to esophageal squamous epithelium. Radiat. Res., 162:233-240, 2004.

245. Epperly MW, Carpenter M, Agarwal A, Mitra P, Nie S, Greenberger JS. Intra-oral manganese superoxide dismutase plasmid liposome radioprotective gene therapy decreases ionizing irradiation-induced murine mucosal cell cycling and apoptosis. In Vivo, 18:401-410, 2004.

246. Epperly Michael W, Shen Hongmei, Jefferson Mia, Greenberger Joel S. In vitro differentiation capacity of esophageal progenitor cells with capacity for homing and repopulation of the ionizing irradition damaged esophagus. In Vivo, 18:675-685, 2004.

247. Stone Helen B, Coleman C Norman, Moulder John E, Ang K Kian, Anscher Mitchell S, Barcellos-Hoff Mary Helen, Dynan William S, Fike John R, Grdina David J, Greenberger Joel S, Hauer-Jensen Martin, Hill Richard P, Kolesnick Richard N, MacVittie Thomas J, Marks Cheryl, McBride William H, Metting Noelle, Pellmar Terry, Purucker Mary, Robbins Michael E C, Schiestl Robert H, Seed Thomas M, Tomaszewski Joseph, Travis Elizabeth L, Wallner Paul E, Wolpert Mary Zaharevitz Daniel. Models for evaluating agents intended for the prophylaxis, mitigation, and treatment of radiation injuries. Report of an NCI Workshop, December 3-4, 2003. Rad. Research, 162:711-718, 2004.

248. Mazzacurati L, Pattacini L, Brusa G, Mancini M, Benvenuti M, Barbieri E, Martinelli G, Baccarani M, Greenberger JS, Santucci MA. CHK2 drives late $G_1$/early S phase arrest of clonal myeloid progenitors expressing the p210 BCR-ABL tyrosine kinase in response to ST1571. Journal of Hematology, 5(2): 168-177, 2004.

249. 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.

250. 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.

251. 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.

252. Zhou Shuanhu, Lechpammer Stanislav, Greenberger Joel, Glowacki Julie. Hypoxia inhibition of adipocytogenesis in human bone marrow stromal cells requies TGFβ/Smad$^3$ signaling. J. Biol. Chem., 280(4):22688-22696, 2005.

253. 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.

254. 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.

255. 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.

256. 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.

257. 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, 165:671-677, 2006.

258. 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, 20:333-340, 2006.

259. Epperly Michael W, Franicola Darcy, Zhang Xichen, Nie Suhua, Wang Hong, Bahnson Alfred, Shields Donna, Goff Julie, Shen Hongmei, and Greenberger Joel S. Reduced irradiation pulmonary fibrosis and stromal cell migration in Smad3-/- marrow chimeric mice. In Vivo, 20:573-582, 2006.

260. Bayir H, Fadeel B, Palladino MJ, Witasp E, Kurnikov IV, Tyurina YY, Tyurin VA, Amoscato AA, Jiang J, Kochanek PM, DeKosky ST, Greenberger JS, Shvedova AA, Kagan VE. Apoptotic interactions of cytochrome c: Redox flirting with anionic phospholipids within and outside of mitochondria. Biochimica et Biophysica Acta, 648-659, 2006.

261. 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. In Vivo, 20:431-438, 2006.

262. Kagan, VE, Tyurina YY, Bayir H, Chu CT, Kapralov AA, Vlasova II, Belikova NA, Tyurin VA, Amoscato A, Epperly M, Greenberger J, DeKosky S, Shvedova AA, Jiang J. The "pro-apoptotic genies" get out of mitochondria: Oxidative lipidomics and redox activity of cytochrome c/cardiolipin complexes. Chemico-Biological Interactions 163:15-28, 2006.

263. Epperly Michael W, Franicola Darcy, Zhang Xichen, Nie Suhua, Greenberger Joel S. Effect of EGFR receptor antagonists gefitinib (Iressa) and C225 (Cetuximab) on MnSOD-Plasmid Liposome transgene radiosensitization of a murine squamous cell carcinoma cell line. In Vivo, 20:791-796, 2006.

264. Epperly Michael W, Wegner Rodney, Kanai Anthony J, Kagan Valerian, Greenberger Emily E, Nie Suhua, Greenberger Joel S. Effects of MnSOD-Plasmid Liposome gene therapy on antioxidant levels in the irradiated murine oral cavity orthotopic tumors. Radiation Research, 167:289-297, 2007.

265. 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. Experimental Hematology, 35:137-145, 2007.

266. Jiang Jianfei, Kurnikov Igor, Belikova Natalia A, Xiao Jingbo, Zhao Qing, Vlasova Irina L, Amoscato Andrew A, Braslau Rebecca, Studer Armido, Fink Mitchell P, Greenberger Joel S, Wipf Peter, Kagan Valerian E. Structural requirements for optimized delivery, inhibition of oxidative stress and anti-apoptotic activity of targeted nitroxides. Journal of Pharmacology, Experimental Therapeutics 320(5):1050-1060, 2007.

267. Greenberger Joel S, Epperly Michael W. Antioxidant therapeutic approaches toward amelioration of the pulmonary pathophysiological damaging effects of ionizing irradiation. Current Respiratory Medicine Reviews, 3:29-37, 2007.

268. Belikova Natalia A, Jiang Jianfei, Tyurina Yulia Y, Zhao Qing, Epperly Michael W, Greenberger Joel, Kagan Valerian E. Cardiolipin specific peroxidase reactions of cytochrome c in mitochondria during irradiation induced apoptosis. I.J.R.O.B.P., 69(1):176-185, 2007.

269. Greenberger Joel S. Gene therapy approaches for stem cell protection. Gene Therapy, 15:100-108, 2008.

270. Fink Mitchell P, Macias Carlos A, Xiao Jingbo, Tyurina Yulia Y, Delude Russell L, Greenberger Joel S, Kagan Valerian E, Wipf Peter. Hemigramicidin-TEMPO Conjugates: Novel mitochondria-targeted anti-oxidants. Biochemical Pharmacology, 74:801-809, 2007.

271. Epperly Michael W, Epperly Laura D, Zhang Xichen, Franicola Darcy, Greenberger Joel S. Overexpression of MnSOD transgene product protects cryopreserved bone marrow hematopoietic progenitor cells from ionizing irradiation. Rad. Res., 168:560-566, 2007.

272. Epperly Michael, Jin ShunQian, Nie Suhua, Cao Shaonan, Zhang Xichen, Franicola Darcy, Fink Mitchell, Greenberger Joel S. Ethyl pyruvate, a potentially effective total body irradiation damage mitigator. Rad Res, 168:552-559, 2007.

273. Niu Yunyun, Epperly Michael W, Shen Hongmei, Smith Tracy, Lewis Dale, Gollin Susanne, Greenberger Joel S. Intraesophageal MnSOD-Plasmid Liposome administration enhances engraftment and self-renewal capacity of bone marrow derived progenitors of esophageal squamous epithelium. Gene Therapy, 15:347-356, 2008.

274. Fink Mitchell, Macias Carlos A, Xiao Jingbo, Tyurina Yulia Y, Delude Russell L, Greenberger Joel S, Kagan Valerian E, Wipf Peter. Hemigramicidin-TEMPO conjugates: Novel mitochondria-targeted antioxidants. Crit. Care Med., 35(9):5461-5470, 2007.

275. Belikova Natalia A, Jiang Jianfei, Tyurina Yulia Y, Zhao Qing, Epperly Michael W, Greenberger Joel, Kagan Valerian E. Cardiolipin-specific peroxidase reactions to cytochrome C in mitochondria during irradiation-induced apoptosis. Int J Radiat Oncol Biol Phys, 69(1): 176-186, 2007.

276. Zhou Shuanhu, Greenberger Joel S, Epperly Michael W, Goff Julie P, Adler Carolyn, LeBoff Meryl S, and Glowacki Julie. Age-related intrinsic changes in human bone marrow-derived mesenchymal stem cells and their differentiation to osteoblasts. Aging Cell, 7:335-343, 2008.

277. Qiu Wei, Carson-Walter Eleanor B, Liu Hongtao, Epperly Michael, Greenberger Joel S, Zambetti Gerard P, Zhang Lin, Yu Jian. PUMA regulates intestinal progenitor cell radiosensitivity and gastrointestinal syndrome. Cell, Stem Cell, 2:576-583, 2008.

278. Jiang Jianfei, Belikova Natalia A, Xiao Jingbo, Zhao Qing, Greenberger Joel S, Wipf Peter, Kagan Valerian E. A mitochondria-targeted nitroxide/hemi-gramicidin S conjugate protects mouse embryonic cells against γ –irradiation. IJROBP, 70(3):816-825, 2008.

279. Epperly Michael W, Smith Tracy, Wang Hong, Schlesselman James, Franicola Darcy, Greenberger Joel S. Modulation of total body irradiation induced life shortening by systemic intravenous MnSOD-plasmid liposome gene therapy. Rad. Res., 170:(4)437-444, 2008.

280. Zhang Xichen, Epperly Michael W, Kay Mark A, Chen Zhi-Ying, Smith Tracey, Franicola Darcy, Greenberger Benjamin A, Komanduri Paavani, Greenberger Joel S. Radioprotection in vitro and in vivo by minicircle plasmid carrying the human manganese superoxide dismutase transgene.. Human Gene Therapy, 19:820-826, 2008.

281. Fujita Takeo, Epperly Michael W, Zou Hui, Greenberger Joel S, Wan Yong. Regulation of the APC-separase cascade by TGF-β modulates mitotic progression in BMSC. Molec. Cell Biol., 19:5446-5455, 2008.

282. Tyurina Yulia Y, Tyurin Vladimir A, Epperly Michael W, Greenberger Joel S, Kagan Valerian E. Oxidative lipidomics of γ-irradiation induced intestinal injury. Free Radic. Biol. Med., 44:299-314, 2008.

283. Tyurin Vladimir A, Tyurina Yulia Y, Kochanek Patrick M, Hamilton Ronald, DeKosky Steven T, Greenberger Joel S, Bayir Hulya, Kagan Valerian E. Oxidative lipidomics of programmed cell death. Methods in Enzymology, Chapter 19, 442:375-393, 2008.

284. Kagan Valerian E., Bayir Ayse, Bayir Hulya, Stoyanovsky Detcho, Borisenko Grigory G, Tyurina Yulia Y, Wipf Peter, Atkinson Jeffrey, Greenberger Joel S, Chapkin Robert S, and Belikova Natalia A. Mitochondria-targeted disruptors and inhibitors of cytochrome c/cardiolipin peroxidase complexes: A new strategy in anti-apoptotic drug discovery. Mol. Nutr. Food Res., 53:104-114, 2009.

285. Epperly Michael W, Melendez Andres, Zhang Xichen, Franicola Darcy, Smith Tracey, Greenberger Benjamin A, Komanduri Paavani, Greenberger Joel S. Mitochondrial targeting of a catalase transgene product by plasmid liposomes increases radioresistance in vitro and in vivo. Radiation Research, 171:588-595, 2009.

286. Kagan Valerian E, Bayir Hulya A, Belikova Natalia A, Kapralov Olexandr, Tyurina Yulia Y, Tyurin Vladimir A, Jiang Jianfei, Stoyanovsky Detcho A, Wipf Peter, Kochanek Patrick, Greenberger Joel S, Pitt Bruce, Shvedova Anna A, and Borisenko Grigory. Cytochrome c/cardiolipin relations in mitochondria: a kiss of death. Free Radic. Biol. Med., 46:1439-1453, 2009.

287. Greenberger Joel S. "Radioprotection". In Vivo, 23:323-336, 2009.

288. Greenberger JS, Epperly M. Bone marrow-derived stem cells and radiation response. Semin. Radiat. Oncol., 19:133-139, 2009.

289. Goff Julie P, Shields Donna S, Seki Mineaki, Choi Serah, Epperly Michael W, Dixon Tracy, Wang Hong, Bakkenist Christopher J, Dertinger Stephen, Torous Dorothea K, Wittschieben John, Wood Richard D, Greenberger Joel S. Loss of DNA polymerase Θ (POLQ) causes radiosensitization of bone marrow stromal cells in vitro and alters hematopoietic response to irradiation in vivo. Rad. Res., 172:165-174, 2009.

290. Epperly Michael W., Rugo Rebecca, Cao Shaonan, Wang Hong, Franicola Darcy, Goff Julie P, Shen Hongmei, Zhang Xichen, Wiktor-Brown Dominika, Engelward Bevin, and Greenberger Joel S. Investigation of the effects of aging on homologous recombination in long-term bone marrow cultures. In Vivo, 23:669-678, 2009.

291. Jiang Jianfei, McDonald Peter, Dixon Tracy M, Franicola Darcy, Zhang Xichen, Nie Suhua, Epperly Laura D, Kagan Valerian E, Lazo John S, Epperly Michael W, Greenberger Joel S. Synthetic protection short interfering RNA screen reveals Glyburide as a novel radioprotector. Rad. Res., 172:414-422, 2009.

292. Jiang Jianfei, Stoyanovsky Detcho, Belikova Natalia A, Tyurina Yulia Y, Zhao Qing, Tungekar Muhammad A, Kapralova Valentina, Huang Zhentai, Mintz Arlan, Greenberger Joel S, and Kagan Valerian E. A mitochondria-targeted triphenylphosphonium-conjugated nitroxide functions as a radioprotector/mitigator. Rad. Res. 172:706-714, 2009.

293. Rajagopalan Malolan S, Gupta Kanika, Epperly Michael W, Franicola Darcy, Zhang Xichen, Wang Hong, Zhao Hong, Tyurin Vladimir A, Kagan Valerian E, Wipf Peter, Kanai Anthony, and Greenberger Joel S. The mitochondria-targeted nitroxide JP4-039 augments potentially lethal irradiation damage repair. In Vivo 23:717-726, 2009.

294. Belikova Natalia A, Jiang Jianfei, Stoyanovsky Detcho A, Greenberger Joel S, and Kagan Valerian E. Mitochondria-targeted (2-hydroxyamino-vinyl)-triphenyl-phosphonium releases NO and protects mouse embryonic cells against irradiation-induced apoptosis. FEBS Letters, 583:1945-1950, 2009.

295. Tyurin Vladimir A, Tyurina Yulia Y, Jung Mi-Y, Tungekar Muhammad A, Wasserloos Karla J, Bayir Hulya, Greenberger Joel S, Kochanek Patrick M, Shvedova Anna A, Pitt Bruce, and Kagan Valerian E. Mass-spectrometric analysis of hydroperoxy- and hydroxy-derivatives of cardiolipin and phosphatidylserine in cells and tissues induced by proapoptotic and pro-inflammatory stimuli. Journal of Chromatography B, 877(26):2863-79, 2009.

296. Kagan, Valerian E, Wipf Peter, Stoyanovsky Detcho, Greenberger Joel S, Borisenko Grigory, Belikova Natalia A, Yanamala Naveena, Samhan Arias Alejandro K, Tungekar Muhammad A, Jiang Jianfei, Tyurina Yulia Y, Ji Jing, Klein-Seetharaman Judith, Pitt Bruce R, Shvedovah Anna A, Bayir Hulya. Mitochondrial targeting of electron scavenging antioxidants: Regulation of selective oxidation vs random chain reactions. Advanced Drug Delivery Reviews 61(14):1375-85, 2009.

297. Stoyanovsky Detcho A, Vlasova Irina I, Belikova Natalia A, Kapralov Alexandr, Tyurin Vladimir, Greenberger Joel S, Kagan Valerian E. Targeting and activation of NO donors in mitochondria. Peroxidase metabolism of (2-Hydroxyamino-Vinyl)-Triphenyl-Phosphonium by cytochrome c releases NO and protects cells from apoptosis. FEBJ Letters, 583:2000-2005, May, 2009.

298. Belikova Natalia A, Glumac Ashley, Rafikov Ruslan, Jiang Jianfei, Greenberger Joel S, Kagan Valerian E, and Bayir Hulya. Radioprotection by short-term oxidative preconditioning: Role of manganese superoxide dismutase. FEBS Letters, 583:3437-3442, 2009.

299. Epperly Michael W, Smith Tracy, Zhang Xichen, Greenberger Benjamin, Komanduri Paavani, Wang Hong, and Greenberger Joel S. Modulation of in utero total body irradiation induced newborn mouse growth retardation by maternal manganese superoxide dismutase-plamid liposome (MnSOD-PL) gene therapy. Gene Therapy, 18:579-583, 2010.

300. Tyurin Vladimir A, Tyurina Yulia Y, Ritov Vladimir B, Lysytsya Andriy, Amoscato Andrew A, Kochanek Patrick M, Hamilton Ronald, DeKosky Steven T, Greenberger Joel S, Bayir Hulya, Kagan Valerian E. Oxidative lipidomics of apoptosis: Quantitative assessment of phospholipid hydroperoxides in cells and tissues. Molecular Biology, 610:353-374, 2010.

301. Epperly Michael W, Lai Stephen M, Mason Neal, Lopresi Brian, Dixon Tracey, Franicola Darcy, Niu Yunyun, Wilson William R, Kanai Anthony J, and Greenberger Joel S. Effectiveness of combined modality radiotherapy of orthotopic human squamous cell carcinomas in Nu/Nu mice using Cetuximab, Tirapazamine, and MnSOD-plasmid liposome gene therapy. In Vivo, 24:1-8, 2010.

302. Niu, Yunyun, Wang Hong, Wiktor-Brown Dominika, Rugo Rebecca, Shen Hongmei, Huq M Saiful, Engelward Bevin, Epperly Michael, Greenberger Joel S. Irradiated esophageal cells are protected from radiation-induced recombination by MnSOD gene therapy. Rad. Res., 173:453-461, 2010.

303. Epperly Michael W, Franicola Darcy, Shields Donna, Rwigema Jean-Claude, Stone Brandon, Zhang Xichen, McBride William, Georges George, Wipf Peter, and Greenberger Joel S. Screening for in vitro radiation protection and mitigation capacity of antimicrobial agents including those used in supportive care regimens for bone marrow transplant recipients. In Vivo, 24(1):9-20, 2010.

304. Gokhale Abhay S, Epperly Michael, Glowacki Julie, Wang Hong, Wipf Peter, Pierce Joshua G Dixon Tracy, Patrene Ken, Greenberger Joel S. Small molecule GS-nitroxide and MnSOD gene therapy ameliorate ionizing irradiation-induced delay in bone wound healing in a novel murine model. In Vivo, 24:377-386, 2010.

305. Rajagopalan Malolan S, Stone Brandon, Rwigema Jean-Claude, Salimi Umar, Epperly Michael W, Goff Julie, Franicola Darcy, Dixon Tracy, Cao Shaonan, Zhang Xichen, Buchholz Bettina M, Bauer Anthony J, Choi Serah, Bakkenist Christopher, Wang Hong, and Greenberger Joel S. Intraesophageal manganese superoxide dismutase-plasmid liposomes ameliorates novel total body and thoracic irradiation sensitivity of homologous deletion recombinant negative nitric oxide synthase-1 (NOS1-/-) mice. Rad. Res., 174:297-312, 2010.

306. Epperly Michael W, Rwigema Jean-Claude M, Li Song, Gao Xiang, Wipf Peter, Goff Julie, Wang Hong, Franicola Darcy, Shen Hongmei, Kagan Valerian, Bernard Mark, and Greenberger Joel S. Intraesophageal administration of GS-nitroxide (JP4-039) protects against ionizing irradiation-induced esophagitis. In Vivo, 24(6):811-821, 2010.

307. Rugo Rebecca, Mutamba James T, Yee Tiffany, Greenberger Joel, and Engelward Bevin P. Methyltransferases mediate cell memory of a genotoxic insult. Oncogene, 30(6):751-756, 2011.

308. Mustata Gabriela, Li Mei, Zevola Nicki, Bakan Ahmet, Zhang Lin, Epperly Michael, Greenberger Joel S, Yu Jian, and Bahar Ivet. Development of small molecule PUMA inhibitors for mitigating radiation-induced cell death. Current Topics in Medicinal Chemistry, 11:281-290, 2011.

309. Koide Kazunori, Osman Sami, Garner Amanda L, Song Fengling, Dixon Tracy, Greenberger, Joel S, and Epperly Michael W. The use of 3,5,4$^{'}$-Tri-O-acetylresveratrol as a potential prodrug for Resveratrol protects mice from γ-irradiation-induced death. ACS Medicinal Chemistry Letters, 362 pg. 4.56, 2011.

310. Tyurina Yulia Y, Tyurin Vladimir A, Kapralova Valentyna I, Wasserloos Karla, Mosher Mackenzie, Epperly Michael, Greenberger Joel, Pitt Bruce R, and Kagan Valerian E. Oxidative lipidomics of γ-irradiation induced lung injury: Mass-spectrometric characterization of cardiolipin and phosphatidylserine peroxidation. Rad. Res., 175:610-621, 2011.

311. Tarhini Ahmad A, Belani Chandra, Luketich James D, Ramalingam Suresh S, Argiris Athanassios, Gooding William, Petro Daniel, Kane Kevin, Liggitt Denny, Championsmith Tony, Zhang Xichen, Epperly Michael W, and Greenberger Joel S. A phase I study of concurrent chemotherapy (Paclitaxel and Carboplatin) and thoracic radiotherapy with swallowed manganese superoxide dismutase (MnSOD) plasmid liposome (PL) protection in patients with locally advanced stage III non-small cell lung cancer. Human Gene Therapy, 22(3):336-343, 2011.

312. Goff Julie P, Epperly Michael W, Shields Donna, Wipf Peter, Dixon Tracy, and Greenberger Joel S. Radiobiologic effects of GS-nitroxide (JP4-039) in the hematopoietic syndrome. In Vivo, 25:315-324, 2011.

313. Kim Jong Oh, Huq M Saiful, Novotny, Jr Josef, Bednarz Greg, Palatine Richard, Reilly Michael, Izadbakhsh Mark, Paris Paul, and Greenberger Joel S. Performance characteristics of a novel radioactive isotope detection and notification system designed for use in hospitals. Health Physics Operational Radiation Safety, 100:Suppl. 2: 571-578, 2011.

314. Rwigema Jean-Claude M, Beck Barbara, Wang Wei, Doemling Alexander, Epperly Michael W, Shields Donna, Franicola Darcy, Dixon Tracy, Frantz Marie-Celine, Wipf Peter, Tyurina Yulia, Kagan Valerian E, Wang Hong, and Greenberger Joel S. Two strategies for the development of mitochondrial-targeted small molecule radiation damage mitigators. Int. J. Radiat. Oncol. Biol. Phys., 80(3):860-868, 2011.

315. Epperly Michael W, Wang Hong, Jones Jeffrey, Dixon Tracy, Montesinos Carlos, and Greenberger Joel S. Antioxidant-chemoprevention diet ameliorates late effects of total body irradiation and supplements radioprotection by MnSOD-plasmid liposome administration. Radiation Research, 175:759-765, 2011.

316. Pennathur Arjun, Qureshi Irfan, Schuchert Matthew J, Ferson Peter F, Dhupar Rajeev, Gooding William E, Christie Neil A, Gilbert Sebastien, Shende Manisha, Greenberger Joel S, Landreneau Rodney J, and Luketich James D. A comparison of surgical techniques for early stage thymoma: feasibility of minimally invasive thymectomy and a comparison with open resection. J. Thoracic. Cardiovasc. Surgery, 141:694-701, 2011.

317. Stoyanovsky Detcho A, Huang Zhentai, Jiang Jianfei, Belikova Natalia A, Tyurin Vladimir, Epperly Michael W, Greenberger Joel S, Bayir Hulya, and Kagan Valerian E. A manganese-porphyrin complex decomposes hydrogen peroxide, compartmentalizes into mitochondria, inhibits apoptosis, and acts as a radiation mitigator in vivo. J.ACS Medicinal Chemistry Letters, 362:21-34, 2011.

318. Olson Adam C, Wegner Rodney E, Scicutella Carol, Heron Dwight E, Greenberger Joel S, Huq M Saiful, Bednar Gregory, and Flickinger John C. Quality assurance analysis of a large multicenter

practice: Does increased complexity of intensity modulated radiotherapy lead to increased error frequency? Int. J. Radiat. Oncol. Biol. Phys., 82:e77-e82, 2012.

319. Kim Hyun, Epperly Michael W, Flickinger, Jr. John, Bernard Mark, and Greenberger Joel S. The Pro-autophagy drug Carbamazepine is a radiation protector and mitigator. Int. J. Rad. Biol., 87(10):1052-1060, 2011.

320. Bernard Mark E, Kim Hyun, Berhane Hebist, Epperly Michael W, Franicola Darcy, Zhang Xichen, Houghton Frank, Shields Donna, Wang Hong, Bakkenist Christopher J, Frantz Marie-Celine, Wipf Peter, Greenberger Joel S. GS-nitroxide (JP4-039) mediated radioprotection of human Fanconi Anemia cell lines. Radiation Research, 176:603-612, 2011.

321. Kim Hyun, Bernard Mark E, Epperly Michael W, Shen Hongmei, Amoscato Andrew, Dixon Tracy M, Doemling Alexander S, Li Song, Gao Xiang, Wipf Peter, Wang Hong, Zhang Xichen, Kagan Valerian E, and Greenberger Joel S. Amelioration of radiation esophagitis by orally administered p53/mdm2/mdm4 inhibitor (BEB55) or GS-Nitroxide. In Vivo, 25(6):841-849, 2011.

322. Bernard Mark E, Kim Hyun, Rwigema Jean-Claude, Epperly Michael W, Kelley Eric E, Murdoch Geoffery H, Dixon Tracy, Wang Hong, and Greenberger Joel S. Role of the esophageal vagus neural pathway in ionizing irradiation-induced seizures in Nitric Oxide Synthase-1 homologous recombination negative NOS1-/- mice. In Vivo, 25(6):861-870, 2011.

323. Bernard Mark E, Kim Hyun, Rajagopalan Mallan S, Stone Brandon, Salimi Umar, Rwigema Jean-Claude, Epperly Michael W, Shen Hongmei, Goff Julie, Franicola Darcy, Dixon Tracy, Cao Shaonan, Zhang Xichen, Reynolds Susan D, Wang Hong, Stolz Donna B, and Greenberger Joel S. Repopulation of the irradiation damaged lung with marrow derived cells. In Vivo, 26:9-18, 2012.

324. DeFoe Sarahgene Gillianne, Pennathur Arjun, Flickinger John C, Dwight E. Heron, Gibson Michael, Luketich James, and Greenberger Joel S. Retrospective review of patients with locally advanced esophageal cancer treated at the University of Pittsburgh. American Journal of Clinical Oncology, 34(6):587-592, 2011.

325. Atkinson Jeffrey, Kapralov Alexandr A, Yanamala Naveena, Pearce Linda, Peterson Jim, Tyurina Yulia Y, Epperly Michael W, Huang Zhentai, Jiang Jianfei, Maeda Akihiro, Feng Weihong, Wasserloos Karla, Belikova Natalia A, Tyurin Vladimir A, Fletcher Jackie, Wang Yongsheng, Vlasova Irina I, Klein-Seetharaman Judith, Stoyanovsky Detcho A, Bayir Hulya, Pitt Bruce R, Greenberger Joel S, and Kagan Valerian E. A mitochondria-targeted inhibitor of cytochrome c peroxidase mitigates radiation induced death. Nature Communications, 2:497, 2011.

326. Olipitz Werner, Wiktor-Brown Dominika, Shuga Joe, Pang Bo, McFaline Jose, Lonkar Pallavi, Thomas Aline, Mutamba James T, Greenberger Joel S, Samson Leona D, Dedon Peter C, Yanch Jacquelyn, and Engelward Bevin P. Integrated molecular analysis indicates undetectable DNA damage in mice after continuous irradiation at ~400-fold natural background radiation. Environmental Health Perspectives, 120(8): 1130-1136, 2012.

327. Kim Hyun, Bernard Mark E, Farkas Amy, Goff Julie, Kalash Ronny, Houghton Frank, Shields Donna, Franicola Darcy, Dixon Tracy, Zhang Xichen, Epperly Michael, Wang Hong, Cobanoglu Murat Can, and Greenberger Joel S. Ionizing irradiation protection and mitigation of murine cells by Carbamazepine is p53 and autophagy independent. In Vivo, 26:341-354, 2012.

328. O'Sullivan Regina, Greenberger Joel S, Goff Julie, Cao Shaonan, Kingston Kiera A, Zhou Shuanhu, Dixon Tracy, Houghton Frank D, Epperly Michael W, Wang Hong, and Glowacki Julie. Dysregulated in vitro hematopoiesis, radiosensitivity, proliferation, and osteoblastogenesis with marrow from SAMP6 mice. Experimental Hematology 40:499-509, 2012.

329. Pearce Linda L, Martinez-Bosch Sandra, Khlangwiset Pornsri, Zhang Xichen, Epperly Michael W, Fink Mitchell P, Greenberger Joel S, Peterson Jim. L-Argrinine is a protector but not a mitigator of the effects of ionizing radiation on hematopoietic progenitor cells. Rad. Res., 177:792-803, 2012.

330. Jiang Jianfei, Maeda Akihiro, Stoyanovsky Detcho, Ji Jing, Baty Catherine J, Watkins Simon C, Greenberger Joel S, and Kagan Valerian E. Are mitochondrial reactive oxygen species required for autophagy? Biochem Biophys Res Commun, 412:55-60, 2011.

331. Zellefrow Crystal, Sharlow Elizabeth R, Reese Celeste, Shun Tongying, Kagan Valerian, Epperly Michael, Greenberger Joel, and Lazo John S. Identification of druggable targets for radiation mitigation using a small interfering RNA screening assay. Rad. Res., 178:150-159, 2012.

332. Flickinger, Jr. John C, Kim Hyun, Kano Hideyuki, Greenberger Joel S, Lunsford L Dade, Kondziolka Douglas, and Flickinger, Sr. John C. Do carbamazepine, gabapentin, or other anticonvulsants exert sufficient radioprotective effects to alter responses to trigeminal neuralgia radiosurgery? Int. J. Radiat. Oncol. Biol. Phys., 83(4):501-506, 2012.

333. Tyurina Yulia Y, Tungekar Muhammad A, Jung Mi-Yeon, Tyurin Vladimir A, Greenberger Joel S, Stoyanovsky Detcho A, and Kagan Valerian E. Mitochondria targeting of non-peroxidizable triphenylphosphonium conjugated oleic acid protects mouse embryonic cells against apoptosis: role of cardiolipin remodeling. FEBS Letters, 586:235-241, 2012.

334. Greenberger Joel S, Clump David, Kagan Valerian, Bayir Hulya, Lazo John, Wipf Peter, Li Song, Gao Xiang, and Epperly Michael W. Strategies for discovery of small molecule radiation protectors and radiation mitigators. Frontiers in Radiation Oncology, 1 (article 59):1-12, 2012.

335. Samhan-Arias AK, Ji J, Demidova OM, Sparvero LJ, Feng W, Tyurin V, Tyurina YY, Epperly MW, Shvedova AA, Greenberger JS, Bayir H, Kagan VE, and Amoscato AA. Oxidized phospholipids as biomarkers of tissue and cell damage with a focus on cardiolipin. Biochim Biophys Acta, 1818(10):2413-2423, 2012.

336. Epperly Michael W, Bahary Nathan, Quader Mubina, Dewald Valerie, and Greenberger Joel S. The Zebrafish – Danio rerio – is a useful model for measuring the effects of ionizing irradiation. In Vivo, 26(6):889-897, 2012.

337. Gao Xiang, Huang Yixian, Makhov Alexander M, Epperly Michael, Lu Jianqin, Grab Sheila, Zhang Peijun, Rohan Lisa, Wipf Peter, Greenberger Joel, and Li Song. Nanoassembly of surfactants with interfacial drug-interactive motifs as tailor-designed drug carriers. Mol. Pharm., 10(1):187-198, 2013.

338. Epperly Michael W, Chaillet J Richard, Kalash Ronny, Shaffer Ben, Goff Julie, Shields Donna, Dixon Tracy, Wang Hong, Berhane Hebist, Kim Jee-Hong, and Greenberger Joel S. Conditional radioresistance of tet-inducible manganese superoxide dismutase bone marrow stromal cells. Radiat. Res., 180: 189-204, 2013.

339. Miao Weimin, Feng Richard Xu, Park Moo-Rim, Gu Haihui, Hu Linping, Kang Jin Wook, Ma Shihui, Liang Paulina H, Li Yanxin, Cheng Haizi, Yu Hui, Epperly Michael, Greenberger Joel, and Cheng Tao. Hematopoietic stem cell regeneration enhanced by ectopic expression of ROS-detoxifying enzymes in transplant mice. Molecular Therapy, 21(2):423-432, 2013.

340. Goff Julie, Shields Donna, Wang Hong, Skoda Erin, Sprachman Melissa, Wipf Peter, Lazo John, Atkinson Jeffrey, Kagan Valerian, Epperly Michael, and Greenberger Joel S. Evaluation of potential ionizing irradiation protectors and mitigators using clonagenic survival of human umbilical cord blood hematopoietic progenitor cells. Exp. Hematol., 41(11):957-966, 2013.

341. Kalash Ronny, Berhane Hebist, Goff Julie, Houghton Frank, Epperly Michael W, Dixon Tracy, Zhang Xichen, Sprachman Melissa M, Wipf Peter, Franicola Darcy, Wang Hong, and Greenberger Joel S. Thoracic irradiation effects on pulmonary endothelial compared to alveolar type II cells in fibrosis prone C57BL/6NTac mice. In Vivo, 27:291-298, 2013.

342. Dickson Ryan, Kim Jong Oh, Huq M Saiful, Bednarz Greg, Suyama Joe, Yealy Donald, Izadbakhsh Mark, and Greenberger Joel S. Interceptor and phantom trials of EDNS at UPMC. Hospital Health Physics, 105(Suppl. 3):S199-S208, 2013.

343. Kalash Ronny, Epperly Michael W, Goff Julie, Dixon Tracy, Sprachman Melissa M, Zhang Xichen, Shields Donna, Cao Shaonan, Wipf Peter, Franicola Darcy, Berhane Hebist, and Greenberger Joel S. Amelioration of irradiation pulmonary fibrosis by a water-soluble bi-functional sulfoxide radiation mitigator (MMS350). Radiat Res., 180: 474-490, 2013.

344. Epperly Michael, Cao Shaonan, Shields Donna, Franicola Darcy, Zhang Xichen, Wang Hong, Friedlander Robert, and Greenberger Joel S. Increased hematopoiesis in continuous marrow cultures and radiation resistance of marrow stromal cells form Caspase-1 knockout mice. In Vivo, 27: 419-430, 2013.

345. Berhane Hebist, Epperly Michael, Cao Shaonan, Goff Julie, Franicola Darcy, Wang Hong, and Greenberger Joel S. Radioresistance of bone marrow stromal and hematopoietic progenitor cell lines derived from Nrf2-/- homozygous deletion recombinant negative mice. In Vivo, 27:571-582, 2013.

346. Lazo John S, Sharlow Elizabeth R, Epperly Michael W, Lira Ana, Leimgruber Stephanie, Skoda Erin M, Wipf Peter, and Greenberger Joel S. Pharmacologic profiling of phosphoinositide 3-Kinase

inhibitors as mitigators of ionizing radiation-induced cell death. The Journal of Pharmacology and Experimental Therapeutics, 347:1-12, 2013.

347. Frantz Marie-Celine, Skoda Erin M, Sacher Joshua R, Epperly Michael W, Goff Julie P, Greenberger Joel S, and Wipf Peter. Synthesis of analogs of the radiation mitigator JP4-039 and visualization of BODIPY derivatives in mitochondria. Organic & Biomolecular Chemistry, 11:4147-4153, 2013.

348. Berhane Hebist, Epperly Michael W, Goff Julie, Kalash Ronny, Cao Shaonan, Franicola Darcy, Zhang Xichen, Shields Donna, Houghton Frank, Wang Hong, Sprachman Melissa, Wipf Peter, Li Song, Gao Xiang, Parmar Kalindi, and Greenberger Joel S. Radiobiologic differences between bone marrow stromal and hematopoietic progenitor cell lines from Fanconi Anemia (Fancd2-/-) mice. Radiation Research, 181: 76-89, 2014.

349. Bakkenist Christopher J, Czambel R Kenneth, Clump David A, Greenberger Joel S, Beumer Jan H, and Schmitz John C. Radiation therapy induces the DNA damage response in peripheral blood. Oncotarget, 4(8): 1143-1148, 2013.

350. Ramalingam SS, Kotsakis A, Tarhini AA, Heron DE, Smith R, Friedland D, Petro DP, Raez LE, Brahmer JR, Greenberger JS, Dacic S, Hershberger P, Landreneau RJ, Luketich JD, Belani CP, and Argiris A. A multicenter phase II study of Cetuximab in combination with chest radiotherapy and consolidation chemotherapy in patients with stage III non-small cell lung cancer, JTO, July, 2012, Lung Cancer, 81(3): 416-421, 2013.

351. Gamper Armin M, Rofougaran Reza, Watkins Simon, Siegfried Jill, Greenberger Joel S, Beumer Jan H, and Bakkenist Christopher J. An unpredicted role of ATR in G1-phase makes ATR a better drug target than ATM for radiosensitization. Nucleic Acids Research, 41(22): 10334-10344, 2013.

352. Gao Xiang, Huang Yixian, Makhov Alexander, Epperly Michael, Lu Jianqin, Grab Shiela, Zhang Peijun, Rohan Lisa, Xie Xiang-Qun, Wipf Peter, Greenberger Joel, Li Song. Nano-assembly of surfactants with interfacial drug-interactive motifs as tailor-designed drug carriers. Molecular Pharmaceutics, 10(1): 187-198, 2013.

353. Kalash Ronny, Berhane Hebist, Au Jeremiah, Rhieu Byung Han, Epperly Michael W, Goff Julie, Dixon Tracy, Wang Hong, Zhang Xichen, Franicola Darcy, Shinde Ashwin, and Greenberger Joel S. Differences in irradiated lung gene transcription between fibrosis-prone C57BL/6NHsd and fibrosis-resistant C3H/HeNHsd mice. In Vivo, 28: 147-172, 2014.

354. Kanter David, O'Brien Matthew B, Shi Xiao-Hua, Chu Tianjiao, Mishima Takuya, Beriwal Sushil, Epperly Michael W, Wipf Peter, Greenberger Joel S, and Sadovsky Yoel. PL-13-10114/the impact of ionizing radiation on placental trophoblasts. Placenta, PL13-10114, 1-7, 2014.

355. Glowacki Julie, Mizuno Shuichi, Kung Jason, Goff Julie, Epperly Michael, Dixon Tracy, Wang Hong, and Greenberger Joel S. Effects of mouse genotype on bone wound healing and irradiation-induced delay, In Vivo, 28: 189-196, 2014.

356. Kalash Ronny, Berhane Hebist, Yang Yong, Epperly Michael W, Wang Hong, Dixon Tracy, Rhieu Byung, Greenberger Joel S, and Huq Mohammed Saiful. Improved survival of mice after total body irradiation with 10 MV photon, 2400 MU/min SRS beam. In Vivo 28: 1-12, 2014.

357. Leibowitz Brian J, Wei Liang, Zhang Lin, Ping Xiaochun, Epperly Michael, Greenberger Joel, Cheng Tao, and Yu Jian. Ionizing irradiation induces acute haematopoietic syndrome and gastrointestinal syndrome independently in mice. Nature Communications, 5:3494, 2014.

358. Tyurina Yulia Y, Poloyac Samuel M, Tyurin Vladimir A, Kapralov Alexander A, Jiang Jianfei, Anthonymuthus Tamil Selvan, Kapralova Valentina I, Vikulina Anna S, Jung Mi-Jeon, Epperly Michael W, Mohammadyani Dariush, Klein-Seetharaman Judith, Jackson Travis C, Rochanek Patrick M, Pitt Bruce R, Greenberger Joel S, Vladimirov Yury A, Bayir Hulya, and Kagn Valerian E. A mitochondrial pathway for biosynthesis of lipid mediators. Nature Chemistry, 6(6): 542-552, 2014.

359. Greenberger Joel S, Berhane Hebist, Shinde Ashwin, Rhieu Byung Han, Bernard Mark, Wipf Peter, Skoda Erin M, and Epperly Michael W. Can radiosensitivity associated with defects in DNA repair be overcome by mitochondrial-targeted antioxidant radioprotectors? Frontiers in Radiation Oncology, 4:1: (PMC3926189), 2014.

360. Shinde Ashwin, Epperly Michael W, Franicola Darcy, Cao Shaonan, Goff Julie, Shields Donna, Franicola Darcy, Wipf Peter, Wang Hong, and Greenberger Joel S. Improved hematopoiesis in GS-nitroxide (JP4-039)-treated mouse long-term bone marrow cultures and radioresistance of derived bone marrow stromal cell lines. In Vivo, 28(5): 699-708, 2014.

361. Shinde Ashwin, Epperly Michael W, Cao Shaonan, Franicola Darcy, Shields Donna, Wang Hong, and Greenberger Joel S. Effects of the radiation mitigator bifunctional sulfoxide MMS350 on hematopoiesis and long-term bone marrow cultures. In Vivo, 28: 457-466, 2014.

362. Rhieu Byung Han, Epperly Michael W, Cao Shaonan, Shields Donna, Franicola Darcy, Wang Hong, and Greenberger Joel S. Improved longevity of long-term bone marrow cultures from Toll-Like Receptor-4 (TLR4) deletion recombinant negative mice. In Vivo, 28: 444-448, 2014.

363. Rhieu Byung Han, Epperly Michael W, Cao Shaonan, Franicola Darcy, Shields Donna, Goff Julie, Wang Hong, and Greenberger Joel S. Increased hematopoiesis in long-term bone marrow cultures derived from Fon Willebrand Factor homologous deletion recombinant mice (vWF-/-). In Vivo, 28: 449-456, 2014.

364. Epperly Michael W, Goff Julie P, Franicola Darcy, Wang Hong, Wipf Peter, Li Song, and Greenberger Joel S. Esophageal radioprotection in thoracic irradiated mice with transgenic lung tumors by swallowed JP4-039/F15. In Vivo, 28: 435-440, 2014.

365. Berhane Hebist, Shinde Ashwin, Kalash Ronny, Xu Karen, Epperly Michael W, Goff Julie, Franicola Darcy, Zhang Xichen, Dixon Tracy, Shields Donna, Wang Hong, Wipf Peter, Li Song, Gao Xiang, and Greenberger Joel S. Amelioration of irradiation induced oral cavity mucositis and distant bone marrow suppression in *Fancd2*$^{-/-}$ (FVB/N) mice by intraoral JP4-039/F15. Radiation Research, 182: 35-49, 2014.

366. Rhieu Byung Han, Shinde Ashwin, Epperly Michael W, Dixon Tracy, Wang Hong, Chaillet Richard, and Greenberger Joel S. Organ-specific responses of total body irradiated doxycycline-inducible manganese superoxide dismutase Tet/Tet mice. In Vivo, 28: 1033-1044, 2014.

367. Liu Bing, Bhatt Divesh, Oltvai Zoltan N, Greenberger Joel S, and Bahar Ivet. Significance of p53 dynamics in regulating apoptosis in response to ionizing radiation and polypharmacological strategies. Scientific Reports, 4:6245, 2014.

368. Gill Beant S, Beriwal Sushil, Rajagopalan Malolan, Wang Hong, Hodges Kimberly, and Greenberger Joel S. Quantitative evaluation of radiation oncologists' adaptability to lower reimbursing treatment programs. Practical Radiation Oncology, published on-line 12/17/14, 5: 267-273, 2015.

369. Stoyanovsky Detcho A, Jiang Jianfei, Murphy Michael, Epperly Michael, Li Song, Greenberger Joel, Kagan Valerian, and Bayir Hulya. Design and synthesis of a mitochondria-targeted mimic of glutathione peroxidase, MitoEbselen-2, as a Radiation Mitigator. ACS Med Chem Lett, 7(6): 653-654, 2016.

370. Greenberger Joel, Kagan Valerian, Bayir Hulya, Wipf Peter, and Epperly Michael. Antioxidant approaches to management of ionizing irradiation injury. Antioxidants, 4:82-101, 2015.

371. Wang Xinwei, Wei Liang, Cramer Julie M, Leibowitz Brian J, Judge Colleen, Epperly Michael, Greenberger Joel, Wang Fengchao, Li Linheng, Martin Martin G, Lagasse Eric, Zhang Lin, Yu Jian. Pharmacologically blocking p53-dependent apoptosis protects intestinal stem cells and mice from radiation. Scientific Reports, 5:8566, 2015.

372. Dickson Ryan, Kim Jong Oh, Huq M Saiful, Bednarz Greg, Suyama Joe, Yealy Donald M, Wang Hong, and Greenberger Joel S. A mobile alert system for preparing the delivery of radiation mitigators. In Vivo, 29: 505-514, 2015.

373. Brenner David J, Chao Nelson J, Greenberger Joel S, Guha Chandan, McBride William H, Swartz Harold M, Williams Jacqueline P. Are we ready for a radiological terrorist attack yet? Report from the Centers for Medical Countermeasures Against Radiation Network. Int J Radiation Oncol Biol Phys, 92(3): 504-505, 2015.

374. Kabolizadeh Peyman, Kalash Ronny, Huq Mohammed Saiful, Greenberger Joel S, and Heron Dwight E. Dosimetric definitions of total lung volumes in calculating parameters predictive for radiation-induced pneumonitis. American Journal of Clinical Oncology, 38(4): 401-404, 2015.

375. Gomez-Casal Roberto, Bhattacharya Chitralekha, Epperly Michael W, Wang Hong, Greenberger Joel S, Cameselle-Teijeiro Jose Manuel, and Levina Vera. Radioresistant human lung adenocarcinoma cells that survived multiple fractions of ionizing radiation are sensitive to HSP90 inhibition. Oncotarget 6(42): 44306-44322, 2015.

376. Gomez-Casal Roberto, Bhattacharya Chitralekha, Epperly Michael W, Basse Per, Wang Hong, Nikiforova Marina, Greenberger Joel S, Proia David A, Socinski Mark A, and Levina Vera. HSP90 inhibitor Ganetespib potentiates effect of ionizing radiation in lung adenocarcinoma cells. Molecular Cancer, 7:876-907, 2015.

377. Sharlow ER, Leimgruber S, Lira A, McConnell MJ, Norambuena AM, Bloom GS, Epperly MW, Greenberger JS, and Lazo JS. A small molecule screen exposes mTOR signaling pathway involvement in radiation-induced apoptosis. ACS Chemical Biology, 11(5): 1428-1437, 2016.

378. Song Xinxin, Xie Yangchun, Kang Rui, Hou Wen, Sun Xiaofang, Epperly Michael W, Greenberger Joel S, and Tang Daolin. FANCD2 protects against bone marrow injury from ferroptosis. Biochemical and Biophysical Communications, 480(3): 443-449, 2016.

379. Wei Liang, Leibowitz Brian J, Wang Xinwei, Epperly Michael, Greenberger Joel, Zhang Lin, and Yu Jian. Inhibition of CDK4/6 protects against radiation-induced intestinal injury in mice. Journal of Clinical Investigation, 126(11): 4076-4086, 2016.

380. Zhang Xichen, Hou Wen, Epperly Michael W, Rigatti Lora, Wang Hong, Franicola Darcy, Sivanathan Aranee, and Greenberger Joel S. Evolution of malignant plasmacytoma cell lines from K14E7 Fancd2-/- mouse long-term bone marrow cultures. Oncotarget, Adv. Publication, 9/15/16, 7(42): 68449-68472, 2016.

381. Zhang Haojian, Kozono David E, O'Connor Kevin W, Vidal-Cardenas Sofia, Rousseau Alix, Hamilton Abigail, Moreau Lisa, Gaudiano Emily F, Greenberger Joel, Bagby Grover, Soulier Jean, Grompe Markus, Parmar Kalindi, and D'Andrea Alan D. TGF-β inhibition rescues hematopoietic stem cell defects and bone marrow failure in Fanconi Anemia. Cell Stem Cell, 18: 668-681, 2016.

382. Kagan VE, Mao G, Qu F, Angeli JPF, Doll S, St. Croix C, Dar H, Liu B, Tyurin VA, Ritov VB, Kapralov OA, Amoscato AA, Jiang J, Anthonymuthu T, Mohammadyani D, Yang Q, Klein-Seetharaman J, Watkins S, Bahar I, Greenberger J, Mallampalli R, Stockwell BR, Tyurina YY, Conrad M, and Bayir H. Oxidized arachidonic and adrenic Pes navigate cells to ferroptosis. Nature Chemical Biology, 13: 81-90, 2016.

383. Shinde Ashwin, Berhane, Hebist, Rhieu Byung Han, Kalash Ronny, Xu Karen, Goff Julie, Epperly Michael W, Franicola Darcy, Zhang Xichen, Dixon Tracy, Shields Donna, Wang Hong, Wipf Peter, Parmar Kalindi, Ferris Robert, Li Song, and Greenberger Joel S. Intraoral mitochondrial-targeted GS-Nitroxide, JP4-039, radioprotects normal tissue in tumor-bearing radiosensitive *Fancd2*$^{-/-}$ (C57Bl/6) mice. Radiat. Res., 185: 134-150, 2016.

384. Huang Zhentai, Epperly Michael, Watkins Simon C, Greenberger Joel S, Kagan Valerian E, and Bayir Hulya. Necrostatin-1 rescues mice from lethal irradiation. Biochimica at Biophysica Acta, 1862: 850-856, 2016.

385. Brand Rhonda, Epperly Michael W, Stottlemyer J Mark, Skoda Erin, Gao Xiang, Li Song, Huq Saiful, Wipf Peter, Kagan Valerian E, Greenberger Joel S, and Falo, Jr. Louis D. A topical

mitochondria-targeted redox cycling nitroxide mitigates oxidative stress induced skin damage. Journal Investgative Dermatology, 137(3): 576-586, 2017.

386. Epperly Michael W, Sacher Joshua R, Krainz Tanja, Zhang Xiaolin, Wipf Peter, Liang Mary, Fisher Renee, Li Song, Wang Hong, and Greenberger Joel S. Effectiveness of analogues of the GS-nitroxide, JP4-039, as total body radiation mitigators. In Vivo, 31: 39-44, 2017.

387. Epperly Michael W, Franicola Darcy, Dixon Tracy, Cao Shaonan, Zhang Xichen, Shields Donna, Wang Hong, Wipf Peter, and Greenberger Joel S. Induction of TGF-β by irradiation or chemotherapy in Fanconi Anemia (FA) mouse marrow is modulated by small molecule radiation mitigators JP4-039 and MMS350. In Vivo, 31: 159-168, 2017.

388. Bernard ME, Glaser, SM, Gill BS, Beriwal S, Heron DE, Luketich JD, Friedland DM, Socinski MA, and Greenberger JS. Results of a single institution experience with dose-escalated chemoradiation for locally advanced unresectable non-small cell lung cancer. Frontiers in Radiation Oncology,7:1-10, 2017.

389. Suntharalingam M, Winter K, Ilson D, Dicker AP, Kachnic L, Konski A, Chakravarthy B, Anker C, Thakrar H, Horiba N, Dubey A, Greenberger JS, Raben A, Giguere J, Roof K, Videtic G, Pollock J, Safran H, and Crane CH. Effect of the addition of Cetuximab to Paclitaxel, Cisplatin, and radiation therapy for patients with esophageal cancer: The NRG Oncology RTOG 0436 Phase 3 Randomized Clinical Trial, JAMA Oncology, 2017; doi: 10.1001/jamaoncol.2017.1598.

390. Epperly Michael W, Zhang Xichen, Fisher Renee, Franicola Darcy, Shields Donna, Quickel Michael, Hankey-Giblin Pamela, Wang Hong, and Greenberger Joel S. Reduced competitive repopulation capacity of totipotential hematopoietic stem cells in the bone marrow for Friend Virus infected Fv-2-resistant mice. In Vivo, 31(3): 313-320, 2017.

391. Christner Susan, Guo Jianxia, Parise Robert A, Ringeval Melanie, Hoye Adam T, Wipf Peter, Epperly Michael W, Greenberger Joel S, Beumer Jan H, and Eiseman Julie L. Liquid chromatography-tandem mass spectrometric assay for the quantitation of the novel radiation protective agent and radiation mitigator JP4-039 in murine plasma. Journal of Pharmaceutical and Biomedical Analysis, S0731-7085(17): 32605-5, 2017.

392. Steinman Justin, Epperly Michael, Hou Wen, Willis John, Wang Hong, Fisher Renee, Liu Bing, Bahar Ivet, McCaw Travis, Kagan Valerian, Bayir Hulya, Yu Jian, Wipf Peter, Li Song, Huq M Saiful, and Greenberger Joel S. Improved total-body irradiation survival by delivery of two radiation mitigators that target distinct cell death pathways. Radiat Res 189(1): 68-83, 2018.

393. Krainz Tanja, Du Lina, Lewis Taber, Lamade Andrew M, Calderon Michael, Watkins Simon C, Epperly Michael W, Greenberger Joel S, Bayir Hulya, Wipf Peter, Clark Robert SB. Synthesis and evaluation of a mitochondria-targeting Poly(ADP-ribose) Polymerase-1 inhibitor. ACS, Chem Biol, 13(10): 2868-2879, 2018.

394. Glaser Scott M, Bongiorni Dante R, Roberts Mark S, Balasubramani Goundappa K, Jacobs Bruce L, Kalash Ronny, Beriwal Sushil, Heron Dwight E, and Greenberger Joel S. Challenges in the

analysis of outcomes for surgical compared to radiotherapy treatment of prostate cancer. In Vivo 32: 113-120, 2018.

395. Wei Liang, Leibowitz Brian J, Epperly Michael, Bi Cheng, Li Allen, Steinman, Justin, Wipf Peter, Li Song, Zhang Lin, Greenberger Joel, Yu Jian. The GS-nitroxide JP4-039 improves intestinal barrier and stem cell recovery in irradiated mice. Scientific Reports, 8: 2072, 2018.

396. Bellare Anuj, Epperly Michael W, Greenberger Joel S, Fisher Renee, Glowacki Julie. Development of tensile strength methodology for murine skin wound healing. MethodsX, 5: 337-344, 2018.

397. Willis John, Epperly Michael W, Fisher Renee, Zhang Xichen, Shields Donna, Hou Wen, Wang Hong, Li Song, Wipf Peter, Parmar Kalindi, Guinan Eva, Steinman Justin, and Greenberger Joel S. Amelioration of head and neck irradiation-induced mucositis and distant marrow suppression in Fanca-/- and Fancg-/- mice by intraoral administration of GS-nitroxide (JP4-039). Radiation Research 189: 560-578, 2018.

398. Dar Haider H, Tyurina Yulia Y, Mikulska Karolina A, Shrivastava Indira, Tyurin Vladimir A, Krieger James, St. Croix, Claudette, Watkins Simon, Bayir Erkan, Ting Hsiu-Chi, Mao Gaowei, Ogunsola Abiola F, Flitter Becca A, Freedman Cody, Gaston Jordan R, Holman Theodore, Pilewski Joseph, Greenberger Joel S, Mallampalli Rama, Bahar Ivet, Bomberger Jennifer, Bayir Hulya, and Kagan Valerian E. Pseudomonas aeruginosa utilizes host polyunsaturated phosphatidylethanolamines to trigger theft-ferroptosis in bronchial epithelium. J Clinical Investigation 128(10): 463-4653, 2018.

399. Lou Wenjia, Ting Hsiu-Chi, Reynolds Christian A, Tyurina Yulia Y, Tyurin Vladimir A, Yu Wenxi, Liang Zhuqing, Stoyanovsky Detcho A, Greenberger Joel S, Bayir Hulya, Anthonymuthu Tamil S, Kagan Valerian E, Greenberg Miriam L. Genetic re-engineering of polyunsaturated phospholipid profile of Saccharomyces cerevisiae identifies a role for Cld1 in mitigating the effects of CL peroxidation. Biochim Biophys Acta, S1388-1981(18): 30139-2, 2018.

400. Brand Rhonda M, Wipf Peter, Durham Austin, Epperly Michael W, Greenberger Joel S, Falo, Jr. Louis D. Targeting mitochondrial oxidative stress to mitigate UV-induced skin damage. Frontiers in Pharmacology, 9: No. 920, 1-10, 2018.

401. Epperly Michael W, Wipf Peter, Fisher Renee, Franicola Darcy, Beumer Jan, Li Song, Brand Rhonda, Falo Louis, and Greenberger Joel S. Evaluations of different formulations and routes for the delivery of the ionizing radiation mitigation GS-nitroxide (JP4-039). In Vivo, 32: 1009-1023, 2018.

402. Tyurina Yulia Y, Shrivastava Indira, Tyurin Vladimir A, Mao Gaowei, Dar Haider, Watkins Simon, Epperly Michael, Bahar Ivet, Shvedova Anna A, Pitt Bruce, Mallampalli Rama, Sadovsky Yoel, Gabrilovich Dmitry, Greenberger Joel S, Bayir Hulya, and Kagan Valerian E. "Only a life lived for others is worth living:" Redox signaling by oxygenated phospholipids in cell fate decisions. Antioxidant and Redox Signaling, 29(13): 1333-1358, 2018.

403. Sivananthan Aranee, Shields Donna, Fisher Renee, Hou Wen, Zhang Xichen, Franicola Darcy, Epperly Michael W, Wipf Peter, and Greenberger Joel S. Continuous 1 year oral administration of the radiation mitigator, MMS350, after total body irradiation restores bone marrow stromal cell proliferative capacity and reduces age-related senescence in Fanconi Anemia (Fanca-/-) mice. Radiation Research, 191: 139-153, 2019.

404. Zhang Xichen, Fisher Renee, Shields Donna, Hou Wen, Franicola Darcy, Epperly Michael W, Rigatti Lora, and Greenberger Joel S. Malignant transformation of Fanconi Anemia complementation group D2-deficient (Fancd2-/-) hematopoietic progenitor cells by a single HPV16 oncogene. In Vivo, 33(2): 303-311, 2019.

405. Epperly Michael W, Renee Fisher, Lora Rigatti, Simon Watkins, Xichen Zhang, Wen Hou, Donna Shields, Darcy Franicola, Hulya Bayir, Hong Wang, Stephanie Thermozier, Andrew Henderson, Christopher Donnelly, Peter Wipf, and Joel S. Greenberger. Amelioration of amyotrophic lateral sclerosis (ALS) in $SOD1^{G93A}$ mice by transplanted marrow origin $M_2$ microglia. In Vivo, 33: 675-688, 2019.

406. Tyurina YY, St. Croix C, Watkins S, Epperly M, Anthonymuthu T, Kisin E, Vlassova II, Krysko O, Krysko D, Kapralov A, Dar H, Tyurin VA, Popova EN, Bolevich SB, Timashev PS, Kellum JA, Wenzel SE, Mallampalli R, Greenberger JS, Bayir H, Shvedova AA, and Kagan VE. Redox (phospho)lipidomics of signaling in inflammation and programmed cell death. J. Leukocyte Biology, DOI: 10.1002/JLB:3MIR0119-004RR, 4/19/19, 106: 57-81, 2019.

407. Thermozier Stephanie, Zhang Xichen, Hou Wen, Fisher Renee, Epperly Michael W, Liu Bing, Bahar Ivet, and Greenberger Joel S. Radioresistance of Serpinb3a-/- mice and derived hematopoietic and marrow stromal cell lines. Radiation Research, 192(3): 267-281, 2019.

408. Quinn Thomas J, Ding Xuanfeng, Li Xiaoqiang, Wilson George D, Buelow Katie, Sivananthan Aranee, Thermozier Stephanie, Henderson Andrew, Epperly Michael W, Franicola Darcy, Wipf Peter, Greenberger Joel S, Stevens Craig W, and Kabolizadeh Peyman. Amelioration of mucositis in proton therapy of Fanconi Anemia Fanca-/- mice by JP4-039. In Vivo 33: 1757-1766, 2019.

409. Ejaz Asim, Epperly Michael W, Greenberger Joel S, and Rubin Peter J. Adipose-derived stem cell therapy ameliorates ionizing irradiation fibrosis (RIF) via hepatocyte growth factor mediated TGF-β down regulation and recruitment of bone marrow cells. Stem Cells 37: 791-802, 2019.

410. Epperly Michael W, Fisher Renee, Zhang Xichen, Hou Wen, Shields Donna, Wipf Peter, Wang Hong, Thermozier Stephanie, and Greenberger Joel S. Fanconi anemia (FA) mouse genotype specific total body irradiation mitigation by GS-nitroxide, JP4-039. In Vivo, 34: 33-38, 2020.

411. Kapralov AA, Yang Q, Dar HH, Tyurina YY, Anthonymuthu TS, Kim R, St. Croix CM, Mikulska-Ruminska K, Liu B, Shrivastava IH, Tyurin VA, Ting H-C, Wu YL, Gao Y, Shurin GV, Artyukhova MA, Ponomareva L, Timashev PS, Domingues RM, Stoyanovsky DA, Greenberger JS, Mallampalli RK, Bahar I, Gabrilovich DI, Bayir H, Kagan VE. Redox lipid reprogramming commands susceptibility of macrophages and microglia to ferroptotic death. Nature Chem Biol 16: 278-290, 2020.

412. Thermozier Stephanie, Hou Wen, Zhang Xichen, Shields Donna, Fisher Renee, Bayir Hulya, Kagan Valerian, Yu Jian, Liu Bing, Bahar Ivet, Epperly Michael W, and Greenberger Joel S. Anti-ferroptosis drug, Baicalein, enhances total body irradiation mitigation by two other drugs that target apoptosis and necroptosis. Radiation Research, 193: 435-450, 2020.

413. Zhang Xichen, Fisher Renee, Hou Wen, Shields Donna, Epperly Michael W, Wang Hong, Yu Jian, van Pijkeren Jan-Peter, Watkins Simon, Wipf Peter, and Greenberger Joel S. Second generation probiotics producing IL-22 increase survival of mice after total body irradiation. In Vivo, 34:39-50, 2020

414. Rodriguez Alfredo, Zhang Kaiyang, Farkkila Annilina, Filiatrault Jessica, Yang Chunyu, Velazquez Martha, Furutani Elissa, Goldman Devorah C, Garcia de Teresa Benilde, Garza-Mayen Gilda, McQueen Kelsey, Sambel Larissa A, Molina Bertha, Torres Leda, Gonzalez Marisol, Vadillo Eduardo, Pelayo Rosana, Fleming William H, Grompe Markus, Shimamura Akiko, Hautaniemi Sampsa, Greenberger Joel, Frias Sara, Parmar Kalindi, D'Andrea Alan. MYC promotes done marrow stem cell dysfunction in Fanconi Anemia. Cell Stem Cell, 28: 1-15, 2021.

415. Lewis Luke M, Tang Alice L, Wise-Draper Trisha M, Myers Kasiani C, Greenberger Joel S, Takiar Vinita. Successful use of a therapeutic trial of graduated volume and dose escalation for postoperative head and neck radiotherapy in a Fanconi anemia patient. Head and Neck Case Reports, 42: E16-E22, 2020.

416. Jin Jian-Yue, Hu Chen, Xiao Ying, Zhang Hong, Paulus Rebecca, Ellsworth Susannah, Schild Steven E, Bogart Jeff, Dobelbower MC, Kavadi Vivek S, Narayan Samir, Iyengar Puneeth, Robinson Cliff, Greenberger Joel S, Koprowski Christopher, Machtay Mitchell, Curran Walter, Choy Hak, Bradley Jeffrey D, Kong Feng-Ming. High radiation dose to immune system correlates with poor survival in NSCLC (NRG Oncology RTOG 0617). The Lancet Oncology, (in press).

417. Lamade AM, Huang Z, Mao G, Shrivastava I, Epperly MW, St. Croix CM, Anthonymuthu TS, Hier ZE, Rosenbaum JC, Gough PJ, Berlin J, VanDemark AP, Watkins SC, Bahar I, Greenberger JS, Kagan VE, and Bayir H. Deadly duality of PEBP1: shutting off necroptosis, turning on ferroptosis. Cell Metabolism, (submitted).

418. Ejaz A, Greenberger JS, Rubin P. "Understanding the mechanism involved in radiation-induced fibrosis development and the therapy options". Pharmacology and Therapeutics, (submitted).

419. Kenny Elizabeth M, Egro Franceso M, Ejaz Asim, Coleman Sydney R, Greenberger Joel, and Rubin Peter J. Clinical evidence for fat grafting in radiation-induced soft tissue injury. Clinical Reconstructive Surgery, (in press).

420. Leibowitz Brian J, Wei Liang, Zhao Guangyi, Epperly Michael, Greenberger Joel S, Zhang Lin, and Yu Jian. Epithelial STING and IFN-β drives intestinal regeneration after ionizing irradiation. Science, Translational Medicine, (submitted).

421. Ejaz A, Egro FM, Kenny EM, Coleman SR, Greenberger JS, and Rubin JP. Current evidence for fat grating in radiation-induced soft tissue injury Part II: Mechanisms and animal models. Stem Cell Reports, (in revision).

422. Suneja Gita, Mattes Malcom, Vega Raymond B Mailhot, Escorcia Freddy E, Lawton Colleen, Greenberger Joel, Bhadrasain Vikram, Deville Curtiland, Siker Malika. Pathways for recruiting and retaining women and under-represented minority clinicians and physician scientists into the radiation oncology workforce: A summary of the 2019 ASTRO/NCI Diversity Symposium Session at the ASTRO Annual Meeting. Adv. In Rad Onc. (2020) doi:https://doi.org/10.1015/i.adro.2020.05.0003.

423. Kagan VE, Tyurina YY, Vlasova II, Kapralov AA, Amoscato AA, Lamade A, Anthonymuthu TS, Tyurin VA, Shrivastava IS, Cinemre BF, Epperly MW, Greenberger JS, Beezhold DH, Mallampalli RK, Srivastava AK, Bayir H, Shvedova AA. Redox epiphospholipidome in programmed cell death signaling: catalytic mechanisms and regulation. Frontiers in Endocrinology (in press).

424. Epperly MW, Shields D, Fisher R, Hou W, Wang H, Hamade DF, Mukherjee A, Greenberger JS. Irradiation-induced senescence in $p16^{+/LUC}$ mouse lung compared to bone marrow mesenchymal stem cells (Stromal Cells), and multilineage hematopoietic progenitor cells. Radiation Research, (submitted).

425. Jian-Yu, et al. High radiation dose to immune cells correlates with poor survival in NSCLC (NRG Oncology RTOG) 0617) "(the Work)". Journal of Thoracic Oncology, (submitted).

426. Christie Ian G, Chan Ernest G, Luketich James D, Greenberger Joel, Gooding William E, Burton Steve, Schuchert Matthew, Awais Omar, Christie Neil, Pennathur Arjun. Stereotactic ablative radiosurgery for treatment of limited pulmonary metastases. Annals of Thoracic Surgery, (submitted).

427. Bhatt Divesh, Cobanoglu Murat Can, Oltvai Zoltan N, Greenberger Joel, and Bahar Ivet. Role of p53 in mediating apoptotic response to ionizing radiation and polypharmacological strategies for radiomitigation. PLOS One, (submitted).

428. Rea DJ, Greenberger JS, Lavelle JP. Review Article: Radiation cystitis: past, present, and future. Br J Urol Int, (submitted).

429. 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).

430. Kalash Ronny, Epperly Michael W, Berhane Hebist, Wang Hong, Feghali-Bostwick Carol, and Greenberger Joel S. Amelioration of irradiation-induced pulmonary fibrosis transcripts by a gramicidin S (GS) mitochondrial-targeted nitroxide JP4-039 in human lung fibroblasts. In Vivo, (submitted).

431. Horne Zachary D, Sun Weijing, Gibson Michael K, Pennathur Arjun, Luketich James D, Karlovits Brian J, Heron Dwight E, and Greenberger Joel S. Converting borderline-resectable,

locally-advanced esophageal carcinoma to resectability with neoadjuvant chemoradiotherapy. Archives of Thoracic Surgery, (submitted).

432. Wollstein G, Townsend KA, Epperly MW, Bilonick RA, Schuman JS, Greenberger JS. Modulation of TBI-induced cataracts by Manganese Superoxide Dismutase (MnSOD)-plasmid liposome in vivo. Rad. Res., (submitted).

433. Greenberger JS, et al. Higher radiation dose to immune system correlates with poorer survival in patinets with stage III non-small cell lung cancer: A secondary analysis of a randomized Phase III Cooperative Group Trial (NRG Oncology RTOG0617) by Professor Feng-Ming (Spring) Kong. Int J Radiat Oncol Biol Phys, (2020).

## PUBLICATIONS IN NON-PEER REVIEW JOURNALS:

1. Rosenthal DS, Greenberger JS, Moloney WC. Studies of kidney lysozyme in human acute monomyelocytic leukemia and in the rat chloroma. In: Lysozyme. New York: Academic Press, pp. 335 390, 1974.

2. Greenberger JS, Bensinger WI, Aaronson SA. Selective techniques for the isolation of morphologic revertants of sarcoma virus transformed cells. In: Prescott DM, (Eds). Methods in Cell Biology, Chapter 22, Vol. 14. New York: Academic Press, pp. 237-249, 1976.

3. Greenberger JS, Weichselbaum RR, Come SE. Radiation therapy of Hodgkin's disease: Perspectives in combined modality approaches. In: Canellos GP, (ed). Clinics In Hematology, Vol. 8, No. 3. The Lymphomas. New York: Gruene and Stratton, pp. 611-625, 1979.

4. Ervin T, Greenberger JS, Weichselbaum RR. Non-Hodgkin's lymphomas: Treatment and Controversies. In: Canellos GP, (ed). Clinics In Hematology. Vol. 8, No. 3. The Lymphomas. New York: Gruene and Stratton, pp. 657-667, 1979.

5. Greenberger JS, Davisson PB, Gans PJ. Distinguishable biologic effects of murine leukemia and sarcoma viruses in long-term marrow culture. In: Escobar MR and Friedman H, (Eds). Adv. Exp. Med. and Biol; Macrophages And Lymphocytes: Nature, Functions And Interaction. New York: Plenum Pub. Corp., Vol. B, pp. 111-124, 1980.

6. Greenberger JS, Weichselbaum RR, Cassady JR. Radiation nephropathy: Prevention, diagnosis, management. In: Rieseilbach RE and Garnick MR, (Eds). Cancer And The Kidney. Philadelphia: Lee and Febiger, pp.814-823, 1982.

7. Hapel AJ, Lee JC, Greenberger JS, Ihle JN. Characteristics of IL-3 derived and IL-3 dependent lymphocyte cell lines. In: Van den Brock N, and Hanna M., (ed). *In vivo* Immunology. New York: Plenum Press. Vol. 149, pp. 719-724, 1982.

8. Hapel AJ, Lee JC, Greenberger JS, Ihle JN. Properties of continuouslymphocyte cultures initiated using IL-3. In: Kirchner H and Resch K, (ed). Mechanisms Of Lymphocyte Activation. Amsterdam: Elsevier/North Holland Biomedical Press, Vol. 7, pp. 353-356, 1981.

9. Greenberger JS, Hapel AJ, Nabel G, Ihle JN, Cantor H, Denberg J, Humphries K, Eckner RJ. Effects of murine leukemia viruses on induction and growth of factor-dependent committed and multipotential hematopoietic progenitor cell lines *in vitro*. In: Adv. In Comp. Leukemia Research. Elsevier/North Holland, Inc, pp. 131-132, 1982.

10. Ihle JN, Hapel A, Greenberger JS, Lee JC, Rein A. Possible roles of interleukin-3 in the regulation of lymphocyte differentiation. In: Fefer A and Goldstein Al, (Eds). The Potential Role Of T-Cell Subpopulations In Cancer Therapy. New York: Raven Press. Vol. 20, pp. 70-93, 1982.

11. Greenberger JS, Hapel A, Nabel G, Eckner RJ, Newburger PE, Ihle J, Denburg J, Moloney WC, Sakakeeny MA, Humphries K. Effects of murine leukemia viruses on establishment, growth and differentiation of permanent factor-dependent committed and pluripotential hematopoietic stem cell lines *in vitro*. Chapter (25) In: Baum SJ, Leenay C.E, Thierfeldem, S. (Eds). Experimental Hematology Today - 1982. New York: S. Karger, pp. 195-209, 1982.

12. Eckner RT, Bennett M, Greenberger JS. Persistence of Friend spleen focus forming virus in hematopoietic tissues: Altered self-renewal capacity and "natural surveillance" against preleukemia stem cells. In: Adv. In Comp. Leukemia Research, 1981. Elsevier/North Holland, Inc., Vol., 73, pp. 101 102, 1982.

13. Greenberger JS, Cassady JR, Lipton JA. Treatment of histiocytosis. In: Brain MC and McCulloch PB, (Eds). Current Therapy In Hematology/Oncology 1983-1984. Toronto: B.C. Decker Inc., Vol., 16, pp. 133-138, 1983.

14. Greenberger JS. Long-term hematopoietic cultures. In: Golde D, (ed). Methods In Hematology. New York: Churchill Livingston, Vol. 11, pp. 203-243, 1984.

15. Greenberger JS, Humphries K, Eckner RJ, Sakakeeny MA. Permanent factor-independent hematopoietic stem cell lines: Biological properties *in vitro* and *in vivo*. In: Golde DW and Marks PA, (Eds). Normal And Neoplastic Hematopoiesis, UCLA Symposia On Molecular And Cellular Biology, New Series. New York: Alan R. Liss, Vol. 9, pp. 157-179, 1983.

16. Greenberger JS, Sakakeeny MA, Krensky A, Burakoff S, Reid D, Novak T, Boggs S, Davisson M. Experimental evidence for the potential usefulness of permanent IL-3 dependent multipotential hematopoietic progenitor cell lines in transfusion granulocyte support therapy: Need for expansion of early passage cells. Proc of the Symposium on Long-Term Bone Marrow Cultures, Kroc Foundation, September 1983, Alan R. Liss, New York, pp. 255-273, 1984.

17. Greenberger JS, Cohen GI, Sakakeeny MA. The development of a system for study of bone marrow transplantation *in vitro*: Effects of x-irradiation dose rate and chemotherapeutic agents on the isolated bone marrow microenvironment. Proceedings of the Symposium on Long-Term Bone Marrow Culture, Kroc Foundation, September 1983, Alan R. Liss, New York, pp. 195-211, 1984.

18. Greenberger JS. Recent modifications and technical improvements in human long-term bone marrow cultures. Proceedings of the Symposium on Long-Term Bone Marrow Culture, Kroc Foundation, September 1983, Alan R. Liss, New York, pp. 119-133, 1984.

19. Antman K, Amato A, Proppe K, Lerner H, Harmon D, Suit H, Carey R, Corson JM, Greenberger JS, Wood W, Wilson R. Pooled results of two randomized trials of adjuvant doxorubicin for sarcomas: An EasternCooperative Oncology Group and Dana-Farber Cancer Institute/Massachusetts General Hospital Study. In: Jones S and Salmon S, (Eds). Adjuvant Chemotherapy Of Cancer, IV. Philadelphia: Grune, Stratton, Inc., 1984, pp. 611-619.

20. Antman KH, Shemin R, Corson JM, Greenberger JS. A combined modality approach to malignant pleural mesothelioma. In: Current Controversies In Thoracic Surgery. Philadelphia: pp. 251-259, W.B. Saunders, 1984.

21. Antman K, Amato D, Lerner H, Suit HD, Corson J, Wood WC, Proppe K, Carey R, Greenberger J, Wilson R. Adjuvant doxorubicin for sarcoma: Datafrom the Eastern Cooperative Oncology Group and Dana-Farber Cancer Institute/Massachusetts General Hospital Studies, Cancer Treatment Symposia, Vol. 3, pp. 109-115, 1985.

22. Greenberger JS, Rothstein L, Pierce JH, Sakakeeny MA, FitzGerald TJ, Naparstek E, Weichselbaum RR, Daugherty C. Long-term culture of human granulocytes and granulocyte progenitor cells. Proceedings of The 17th Annual Scientific Symposium In Transfusion Medicine. Transfusion Medicine: Recent Technical Advances. New York: Alan R. Liss, Inc., Vol., 17, pp. 159-185, 1986.

23. Greenberger JS, Naparstek E, FitzGerald TJ, Daugherty C, Rothstein L, Sakakeeny MA, Eckner RJ. Factor-dependent hematopoietic progenitor cell lines enable study of the molecular control of self-renewal and differentiation. Proceedings of Symposium on Humoral and Cellular Regulation of Erythropoiesis, Reno, Nevada, May 19-23, 1985, Spectrum Publications, Inc., pp. 426-482, 1985.

24. Greenberger JS, Key L, Daugherty C, Schwartz J, Sakakeeny MA. Establishment of bone marrow stromal cell cultures and permanent clonal cell lines from osteopetrotic (mi/mi) and Steel mutant (Sl/Sld) mice, In: Studies of bone resorption by engrafted hemopoietic stem cells *in vitro*. Experimental Hematology Today, (Eds) S. J. Baum, New York: Springer-Verlag, Inc., Vol., 18, pp. 42-49, 1986.

25. FitzGerald TJ, Greenberger JS. Radiotherapy and its role in the treatment of Stage II lung cancer. In: Lung Cancer: A Comprehensive Treatise. J.D. Bitran, H.M. Golde, A. G. Littler and R.R. Weichselbaum,(Eds). New York: Grune & Stratton, Inc., pp. 165-173, 1988.

26. FitzGerald TJ, Greenberger JS. Radiotherapy and its role in thetreatment of locally advanced Stage III, non-small cell lung cancer. In: Lung Cancer: A Comprehensive Treatise. J.B. Bitran, H.M. Golde, A. G. Little and R.R. Weichselbaum (Eds). New York: Grune & Stratton, Inc. pp. 207-221, 1988.

27. Wilson RE, Wood WC, Lerner HL, Antman K, Amato D, Corson JM, Proppe K, Harmon D, Carey R, Greenberger JS, Suit H. Combined results of two randomized trials for adriamycin chemotherapy in the treatment of soft tissue sarcoma. S.S.O., AMA 1986 Meeting Proceedings, Vol., 10, pp. 76-85,1986.

28. Greenberger JS, Anklesaria P, Klassen V, Ohta M, FitzGerald TJ, Sakakeeny MA. Marrow stromal cell regulation of clonal hematopoietic stem cell self-renewal and commitment, In: Recent Advances In Leukemia and Lymphoma. UCLA Symposia on Molecular and Cellular Biology, New Series, RP Gale and DW Golde (Eds), New York: Alan R. Liss, 1987, Vol., 61, pp. 351-361.

29. Greenberger JS, Anklesaria P, Glowacki J, Pierce JH, Kase K, FitzGerald TJ. Transplantation of the hematopoietic microenvironment. UCLA Symposia on Molecular and Cellular Biology, New Series, (Eds) D. Golde & S. Clark. Alan R. Liss, Inc., New York, NY., 1990, Vol., 120, pp. 171-179

30. Greenberger JS. The hematopoietic microenvironment. Critical Reviews In Hem/Onc, 11:65-84, 1991, Elsevier Science Publications B.V.

31. Greenberger JS, Leif J, Anklesaria P, Sakakeeny MA, English D, Crawford D, FitzGerald TJ. Biochemical purification of a CSF-1 like molecule released during malignant transformation of IL-3 dependent hematopoietic progenitor cell lines cocultivated with gamma irradiated clonal marrow stromal cell lines. Neoplastic Transformation in Human Cell Cultures, JJ Rhimand, A Patechilla (Eds), Humana Press, Inc., Totowa, NJ, pp. 119-125, 1991.

32. Meeting report (with extended abstracts) CEIR Forum on the effects of cytokines on radiation responses. Wilson A (ed); Greenberger JS. Effect of colony-stimulating factors and cytokines on radiation sensitivity. Int. J. Radiat. Biol., 63(4):529-540, 1993.

33. Greenberger JS. Carcinogenesis and Leukemogenesis Associated With Exposure To Chemicals or X-irradiation: The Oncologists Perspective. In: Oncology And Toxic Substances. Clark, Boardman Pub, 1988.

34. Greenberger JS. Cancer Immunology: Host Resistance To Tumors. In: Oncology And Toxic Substances. Clark, Boardman Pub., 1988.

35. Greenberger JS. "Hematopoiesis." In: Molecular Biology of Cancer, Encyclopedia of Cancer, Bertino JR (ed), Academic Press, Inc., San Diego, CA, Vol. II, pp. 783-794, 1997.

36. Greenberger JS. “The Biology of Spine Metastasis from Lung Cancer”in Journal of Neurooncology, Special Addition on Metastatic Spine Tumors, William C. Welch, M.D., Editor, Kluwer Academic Publishers, 23:109-120, 1995.

37. Jahroudi N, Greenberger JS. The role of endothelial cells in tumor invasion and metastasis. Kluwer Academic Publishers, Special Issue. J Neuro-Oncol, 23:99-108, 1995.

38. Keating A, Greenberger JS. Keystone Symposium “Hematopoietic Microenvironment”, Taos, New Mexico, February 16-22, 1996 (Meeting Summary). Stem Cells, 14:366-367, 1996.

39. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Epperly MW, Hallahan DE, Kufe DW, Weichselbaum R, Greenberger JS. Expression of the MnSOD transgene increases the radioresistance of the 32D cl 3 hematopoietic progenitor cell line. J. Hematology (In Press).

40. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Goltry KL, Greenberger JS. Indirect radiation leukemogenesis: Identification of altered transcripts in irradiated stromal cells. J. Hematology (In Press).

41. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Greenberger JS, Pogue-Geile KL, Goltry KL, Epperly MW, Bray JA. Role of the hematopoietic microenvironment in irradiation leukemogenesis: Studies with M-CSF-deficient (*op/op*) and transgene reconstituted clonal stromal cell lines. J. Hematology (In Press).

42. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Pogue-Geile K, Gott J, Greenberger JS. The role of the microenvironment in the retrotransposition of intracisternal A particles in the evolution of a factor independent murine hematopoietic cell lines. J. Hematology (In Press).

43. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Goff JP, Shields DS, Petersen BE, Michalopoulos GK, Greenberger JS. Effects of hepatocyte growth factor and IL-11 on human cord blood CD34+ progenitor cells. J. Hematology (In Press).

44. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Jahroudi N, Greenberger JS. Bone marrow stromal cells and endothelial cells: differences and the case for a common progenitor cell. J. Hematology (In Press).

45. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Epperly MW, Berry LA, Bray JA, Greenberger JS. Effects of irradiation on the production of reactive oxygen species and nitric oxide by bone marrow stromal and hematopoietic cells. J. Hematology (In Press).

46. Greenberger JS and Keating A (Eds). Series On The Hematopoietic Microenvironment. Chiang GG, McGrath CA, Natale A, Galanopoulos T, Cherington V, Bizinkauska CB, Merrill W, Hansen M, Levine PH, Greenberger JS, Hurwitz DR. Retroviral vector transduced autologous bone marrow stromal cells express human growth hormone or human factor IX into the circulation of reinfused dogs. J. Hematology (In Press).

47. Greenberger JS. "Methods For Use Of Stromal Cells For Therapeutic Gene Therapy." In: Robbins, P. (ed), *Gene Therapy, Protocols, Methods In Molecular Biology*. Humana Press: Totowa, NJ, pp. 375-390, 1997.

48. Greenberger JS. Goff JP. Bush J. Bahnson A. Koebler D. Athanassiou H. DomachM. Houck RK. Expansion of hematopoietic stem cells *in vitro* as a model system for human tissue engineering. Clinics in Plastic Surgery. 26(4):569-78, viii, 1999.

49. Greenberger JS. Obituary of William C. Moloney, 1907-1998. Exp. Hematol., 27:393-394, 1999.

50. Greenberger JS, Epperly MW, Luketich J, Gooding W, Belani C. Manganese superoxide dismutase plasmid/liposome (MnSOD-PL) gene therapy protection of the esophagus from chemoradiotherapy damage during treatment of locally unresectable non-small cell lung cancer (NSCLC). Clinical Lung Cancer, 1(4):302-308, 2000.

51. Greenberger, JS. Surgical Oncology: Contemporary Principals & Practice. In: Bcaus, Daly, Karakousis (Eds.), Carcinogenesis By Physical Agents. Appleton & Lange: Philadelphia, PA. (1999)

52. Greenberger JS. Editorial: Gene Therapy For Radiation Protection. Gene Ther, 6:1495-1496, 1999.

53. Greenberger JS. Expression of hematopoietic growth factor receptors on early hematopoietic precursors: detection and regulation. In: DaleDC. (ed), Current Opinion In Hematology. Lippincott, Williams & Wilkins: Philadelphia, PA., 7(3):161-167, 2000.

54. Epperly MW, Hallahan DE, Kufe DW, Weichselbaum RR, Greenberger JS. Managanese superoxide dismutase transgene expression in 32D cl 3hematopoietic progenitor cells alters binding to irradiated marrow stromal cells. In: Hematopoietic Microenvironment., (Eds) Greenberger JS, Keating, (In Press).

55. Greenberger JS, Keating A. Characterization Of The Stromal Extracellular Matrix, Editorial Comment On Dr. Verfaillie[1]s Paper. The Hematopoietic Microenvironment. Harwood Academic Publishers, and Gordon Breach Publishers, New York, NY. Hematology, 4:319-320, 1999.

56. Greenberger JS, Keating A. Characterization Of Bone Marrow Stromal Cells. The Hematopoietic Microenvironment. Harwood Academic Publishers and Gordon Breach Publishers, New York, NY. Hematology, 4:237, 1999.

57. Greenberger JS, Keating A. Stromal Cell Types: Characterization And Function *In situ* And *In vitro*, Editorial Comment On Dr. Wolf's Paper. TheHematopoietic Microenvironment. Harwood Academic Publishers, and Gordon Breach Publishers, New York, NY. Hematology, 4:239-240, 1999.

58. Greenberger JS, Keating A. Osteogenesis And The Microenvironment, Editorial Comment. The Hematopoietic Microenvironment. Harwood Academic Publishers, and Gordon Breach Publishers, New York, NY. Hematology, 4:419,420, 2000.

59. Niyibizi C, Smith PN, Greenberger JS. The Potential Of Gene Therapy For Osteogenesis Imperfecta. In: Gene Therapy and Tissue Engineering in Orthopaedic and Sports Medicine. Johnny Huard and Freddie Fu (Eds). Springer-Verlag: New York, NY (July 2000).

60. Greenberger JS. Combinatorial cell culture techniques in tissue engineering. E-biomed, 2:October, 2000, Mary Ann Liebert Inc: Larchmont, NY 10538.

61. Greenberger JS, Goff JP, Bush J, Bahnson A, Koebler D, Athanassiou H, Domach M, Houck RK. Stem cells *in vitro* as a model system for human tissue engineering. Orthoped. Clin. North America., 31 (3): 499-509, 32(3):July, 2000.

62. Greenberger JS. Antitumor interaction of short course endostatin and ionizing radiation. The Cancer Journal, 6(5):279-281 (Sept/Oct), 2000.

63. Greenberger JS, Keating A. Hematopoiesis. Editorial on "Specificity of Hematopoietic Stem and Progenitor Cell Homing in Bone Marrow: A Perspective," Cheryl Hardy. Hematology, 5:389-390, 2001.

64. Deasy B, Greenberger JS, Huard J. Characterization of growth factors to improve the proliferative capacity of muscle-derived stem cells. The Pittsburgh Orthopaedic Journal, 12:225-226, 2001.

65. Greenberger JS, Goff J, Epperly MW, Bahnson A, Koebler D, Shields DS, Huard J, Yanez-Hanley, Houck RK. Combinatorial cell culture applications to tissue engineering. *Textbook on Tisue Engineering and Biodegradable Equivalents: Scientific and Clinical Applications* , KU Lewandrowski, D. Wise, D.J. Trantolo, J.D. Gresser, MJ, Yaszemski, and DE Altobelli (Eds), Cambridge Scientific, Inc., Marcel Decker: New York, NY, pp. 691-708, 2002.

66. Greenberger JS. Stem Cell Culture: Hematopoietic Stem Cells. In: *Methods Of Tissue Engineering*. Atala A, Lanza RP (Eds). Academic Press, New York, NY, Chapter 40, pp. 477-485, 2002.

67. Greenberger JS. Stem Cell Culture: Hematopoietic Stem Cells. In: Atala A, Lanza RP (Eds.), Methods of Tissue Engineering. Academic Press, NY: 2002.

68. Wolfe D, Wechuck JB, Krisky DM, Goff J, Goins WF, Ozuer A, Epperly M, Greenberger J, Fink D, Glorioso JC. Herpes simplex virus vectors: Clinical applications. (Textbook Chapter).

69. Greenberger Joel S. Macrophages and fibroblasts from the bone marrow contribute to late effects of ionizing irradiation in the lung. The Journal of Supportive Oncology, (in press) 2004.

70. Greenberger Joel S, Epperly Michael W. Pleiotrophic stem cell and tissue effects of ionizing irradiation protection by MnSOD-plasmid liposome gene therapy. In: Redberry Grace W (Ed.), Gene Therapy in Cancer. Nova Science Publishers, Inc.: 2005. pp. 191-215, Chapter VI.

71. Greenberger Joel S, Epperly Michael W. Radioprotective gene therapy: Current status and future goals. In: Harrington Kevin J, Vile Richard G, Pandha Hardev S (Eds.), Viral Therapy of Cancer. John Wiley & Sons, Ltd., England, 2008. pp. 340-375.

72. Kagan VE, Tyurina YY, Bayir H, Chu CT, Kapralov AV, Vlasova II, Belikova NA, Tyurin VA, Amoscato A, Epperly M, Greenberger J, DeKosky S, Shvedova AA, Jiang J. The "pro-apoptotic genies" get out of mitochondria: oxidative lipidomics and redox activity of cytochrome c/Cardiolipin complexes. Chem Biol Interactions.

73. Greenberger Joel S, Epperly Michael W. Antioxidant therapeutic approaches toward amelioration of ionizing irradiation – induced pulmonary injury. In: Current Respiratory Medicine Reviews, 7:29-37, 2007.

74. Greenberger Joel S, Epperly Michael W. Antioxidant gene therapeutic approaches to normal tissue radioprotection and tumor radiosensitization. In Vivo, 21:141-146, 2007.

75. Greenberger Joel S. Preparing for radiation terrorism: Dirty bomb/fission bomb. In: Allegheny County Medical Society Bulletin, October, 2006.

76. Greenberger Joel S. Could gene therapy prevent the effects of irradiation exposure? Pharmacogenomics, 7(8):1141-1145, 2006.

77. Greenberger J S, Epperly M W, Gretton J, Jefferson M, Nie S, Bernarding M, Kagan V, Guo H-L. Radioprotective gene therapy. Current Gene Therapy, 3:183-195, 2003.

78. Greenberger J S, Epperly M W. Radioprotective antioxidant gene therapy: Potential mechanisms of action. Gene Ther. Mol. Biol., 8:31-44, 2004.

79. Fink Mitchell P, Macias Carlos A, Xiao Jingbo, Tyurina Yulia Y, Jiang Jianfei, Belikova Natalia, Delude Russell L, Greenberger Joel S, Kagan Valerian E, Wipf Peter. Hemigramicidin-TEMPO conjugates: Novel mitochondria-targeted antioxidants. Biochem. Pharmacol., (submitted).

80. Kagan Valerian E, Bayir Ayse, Bayir Hulya, Stoyanovsky Detcho, Borisenko Grigory G, Tyurina Yulia Y, Wipf Peter, Atkinson Jeffrey, Greenberger Joel S, Chapkin Robert S, Belikova Natalia A. Mitochondria-targeted disruptors and inhibitors of CYT c/CL peroxidase complexes: A new strategy in anti-apoptotic drug discovery. Molecular Nutrition and Food Science, (submitted).

81. Miller John Dudley. Cancer treatment surviving side effects. Scientific American, pp. 24-25, 2007.

82. Greenberger J S, Epperly M W. "Stem Cells and Radiation Responses" In Seminars in Radiation Oncology, (R. P. Hill, Editor), 19:No. 2, pp. 133-139, 2009.

83. Greenberger Joel S. "Principles of Radiation Therapy" In Pittsburgh Manual of Surgical Oncology, (David Bartlett, Editor), (2008).

84. Greenberger Joel S. "Radiation Therapy in Multiple Myeloma" In Textbook by David Roodman, M.D., Humana Press, Chapter 4, pp. 91-101, 2010.

85. Greenberger Joel S. "Bioengineering in the Repair of Irradiated Normal Tissue by Bone Marrow Derived Stem Cell Populations" in Cured II Lent Cancer Survivorship Research and Education Late Effects on Normal Tissues, (P Rubin, LS Constine, LB Marks, and P Okunieff, Editors), Springer, NY, pp. 41-55, 2008.

86. Miksch Joe. Nightmare Mitigation Dirty Bombs and Day-After Drugs, Pitt Med, Summer, 2009.

87. Greenberger Joel S, Epperly Michael W. Chapter "Bioengineering of Irradiated Normal Tissues by Bone Marrow Stem Cells". In Textbook of Radiation, (Philip Rubin and Casarett, eds.), 2009.

88. Greenberger Joel S, Kagan Valerian, Peterson James, Epperly Michael. "Radiation Protection by MnSOD-Plasmid Liposome Gene Therapy" in Oxidative Stress in Cancer Therapy (Douglas R.Spitz, Kenneth J. Dornfeld, Koyamangalath Krishnan, David Guis, Eds.), Chapter 19, Humana Press, pp. 387-406, 2011.

89. Greenberger Joel S and Epperly Michael W. "Gene Therapy in Radiotherapy of Cancer", In Gene Therapy for Cancer (Stanton Gerson, M.D. , Ed.), 2011.

90. Greenberger Joel S and Epperly Michael W. "Bioengineering of Irradiated Normal Tissues by Bone Marrow Stem Cells" in ALERT-Adverse Late Effects of Cancer Treatment, Medical Radiology (P. Rubin, et al., Editors), Springer-Verlag, Berlin, Heidelberg, 2013.

91. Greenberger Joel S and Yealy Donald M. What if the Boston bombings contained radioactive material? Are you ready? Fast facts for the radiologist. PA Radiological Society Newsletter, May, 2013.

92. Greenberger, Joel S and Epperly, Michael W. "Radiotherapy for the patient with Fanconi Anemia: A challenge for the radiation oncologist" in Textbook, Fanconi Anemia (FA): Genetic Prevalence, Management, and Treatment Outcomes, Nova Science Publishers, Hauppauge, NY, 2015.

93. Greenberger, Joel; Brenner, David; McBride, William; Chao, Nelson; DiCarlo, Andrea. "Chapter I: Introduction (Purpose of the Course): Radiobiology and Radiobiologic Methods Course from the Center for Medical Countermeasures Against Radiation CMCR Consortium:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

94. Greenberger, Joel "Chapter II: Table of Contents:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

95. Greenberger, Joel. "Chapter III. Overview What is Radiobiology?" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

96. Greenberger, Joel. "Chapter IV. Practical Applications: Rad Countermeasures, Rad Safety Hospital and Home, Diagnostic and Rad Therapy:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

97. Greenberger, Joel. "Chapter V. Radiation Chemistry: Origins of life on earth, SPEs, GCI, gamma rays:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

98. Greenberger, Joel; Karouia, Fathi; Montesinos, Carlos; Jones, Jeffery; Popov, Dmitri; Cristea, Octav; Boreham, Doug. "Chapter VII. Low Dose Rate and Sporadic High LET Radiation: Diets, microbiome, and antioxidants – Chronic Administration of Countermeasures, Monitoring responses to chronic irradiation." In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

99. Greenberger, Joel; Epperly, Michael. "Chapter VIII: Acute Radiation Effects: Total body, subtotal, species differences:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger,

M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

100. Greenberger, Joel; Epperly, Michael. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: A. CNS:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

101. Greenberger, Joel; Epperly, Michael. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: E. Oral/Oropharynx/Esophagus:" *In Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

102. Greenberger, Joel; Epperly, Michael. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: F. Lung:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

103. Greenberger, Joel. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: H. Rectum – Bladder - Prostate:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

104. Greenberger, Joel; Epperly, Michael. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: I. Kidney:" In *Radiobiology Methods Web-Based Course Textbook" Editor*: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

105. Greenberger, Joel; Epperly, Michael. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: K. Fetal/Placental Effects:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

106. Greenberger, Joel; Epperly, Michael. "Chapter IX: Acute Radiation Effects: Organ Specific Organs Dose and Species Differences: L. Irradiation Effects On the Microenvironment:" *In Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

107. Greenberger, Joel. "Chapter X: Late Radiation Effects: A. Organ Failure, CNS Cardiac, Aging - Senescence, Cancer, and Leukemia:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

108. Greenberger, Joel; Epperly, Michael. "Chapter X: Late Radiation Effects: C. Lung:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

109. Greenberger, Joel; Epperly, Michael; Sivananthan, Aranee."Chapter X: Late Radiation Effects: E. Aging/Senescence:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

110. Greenberger, Joel; Byers, Karin. "Chapter XI: Other Forms of Injury: A. Infection:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

111. Greenberger, Joel; Zhang, Xichen. "Chapter XV: Methods for Study of Radiobiology: Overview:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

112. Greenberger, Joel; Epperly, Michael. "Chapter XVI: Classic Radiobiology Methods:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

113. Greenberger, Joel; Bakkenist, Christopher. "Chapter XVII: New Methods:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

114. Greenberger, Joel. "Chapter XVIII: Specifics Techniques in Radiobiology to Approach Specific Challenges:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

115. Greenberger, Joel. "Chapter XX: RNA-micro, siRNA, and Other RNA Moieties Involved in Radiation Biology:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

116. Greenberger, Joel; Epperly, Michael. "Chapter XXI: Animal Models: ATm/ATr, Fanconi Pathway Proteins and Scaffold for Nuclear DNA Repair:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

117. Greenberger, Joel. "Chapter XXII: Proteomics and Networks:" In *Radiobiology Methods Web-Based Course Textbook"* Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASCGreenberger, Joel; Watson, Alan; Watkins, Simon;

118. Sivananthan, Aranee; Thermozier, Stephanie. "Chapter XXIV: In Situ Correlations of Radiation Damage: From the Single Molecule to the Whole Animal:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

119. Greenberger, Joel; Yealy, Donald. "Chapter XXVII: Critical Care Medicine and Management of Mass Radiation Casualties:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

120. Greenberger, Joel; Shinde, Ashwin; Epperly, Michael. "Chapter XXX: Biomarkers of Radiation Injury and Medical Countermeasures (MCM) Effects: Predicting Late Effects and Assessing MCM Efficiency:" In *Radiobiology Methods Web-Based Course Textbook*" Editor: Joel S. Greenberger, M.D., CMCRC Program, University of Pittsburgh, Pittsburgh, PA, 2019: https://pitt.app.box.com/v/CMCR-Virtual-Publications-2018?sortColumn=name&sortDirection=ASC

**BOOKS**

Wright DG, Greenberger JS. Long-Term Bone Marrow Cultures. Alan R. Liss, Inc., Kroc Foundation Series, New York, NY, Vol. 18, pp. 1-458, 1984.

Greenberger JS and Keating AG. The Hematopoietic Microenvironment (Proceedings of the Taos Keystone Symposium on the Hematopoietic Microenvironment. Humana Press Publishers, Published Date: 03/01/1999, ISBN: 0896037045.

Greenberger, Joel S. and Epperly, Michael W.: Radiotherapy for the Patient with Fanconi Anemia: A Challenge for the Radiation Oncologist, Chapter 7. In "Horizons in Cancer Research, Volume 60", editor: Hiroto S. Watanabe, Nova Science Publishers, New York, New York, pgs. 63-76, 2016.

**ABSTRACTS**

1.A Greenberger JS, Moloney WC. Serum muramidase in childhood leukemia. Clinical Res, 18:684A, 1970.

2.A Greenberger JS. Research on marihuana. N Eng J Med, 287:994A, 1972.

3.A Rosenthal DS, Greenberger JS, Magio R, Moloney WC. Lysozyme studies in the normal and leukemic rat. Clinical Res, 20:498A, 1972.

4.A Rosenthal DS, Shen H, Greenberger JS, Moloney WC. Metabolic effects of lysozyme on the rat kidney. Proc Am Soc Hematol, December 1973. Blood, 57:155A, 1973.

5.A Greenberger JS, Aaronson SA. Selective techniques for isolation of morphologic revertants of murine sarcoma virus transformed nonproducer BALB/3T3: Biologic properties *in vitro* and *in vivo*. USPHS Professional Associations 9TH Annual Joint Meeting. Proc. USPHS Annual Meeting, 17: 34A, 1974.

6.A Greenberger JS, Aaronson SA. Physiologic requirements for chemical activation of endogenous Type-C virus. Am Soc Microbiol Annual Meeting. Proc. A.S.M. Journal, p. 254, May 1974.

7.A Greenberger JS, Rosenthal DS, Aaronson SA, Moloney WC. Myelogenous leukemia of the Wistar/Furth rat: Establishment of a continuous tissue culture line producing lysozyme *in vitro* and hyperlysozymemia *in vivo*. Clinical Res, 22:701A, 1974.

8.A Greenberger JS, Aaronson SA, Rosenthal DS, Moloney WC. Stable distinguishable stages of maturation arrest in clonal rat myelogenous leukemias are uninfluenced by Type-C virus activation. Clinical Res, 23:275A, 1975.

9.A Greenberger JS, Stephenson JR, Moloney WC, Aaronson SA. Comparative studies on the leukemogenicities of endogenous and exogenous mouse Type-C RNA viruses. Am Soc Microbiol Annual Meeting. Proc. A.S.M. Journal, p. 260, May 1975.

10.A Greenberger JS, Rosenthal DS, Moloney WC. Hypokalemia in leukemia. Ann Int Med, 82:854A, 1975.

11.A McGrath T, Greenberger JS, Moloney WC. Total body irradiation (TBI) of inbred Wistar/Furth rats: Hematopoietic stem cell responses. Clinical Res, 23:582A, 1975.

12.A Bocaccino CS, Greenberger JS, Moloney WC. Adriamycin-induced remissions in Wistar/Furth rat acute myelogenous leukemia (AML): A model for screening chemotherapeutic agents in human AML. Clinical Res, 23:580A, 1975.

13.A France DS, Greenberger JS, Moloney WC. Growth characteristics of Wistar/Furth rat acute myelogenous leukemia cells in diffusion chambers. Clinical Res, 23:581A, 1975.

14.A Greenberger JS, Bocaccino CS, Szot S, Moloney WC. Adriamycin-induced remissions in selective solid tumor and leukemic forms of Wistar/Furth (W/Fu) rat acute myelogenous leukemia (AML). AACR 67$^{th}$ Annual Meeting. AACR Journal, 17:6A, 1976.

15.A Greenberger JS, Karpas A, France DS, Moloney WC. Production of myeloid enzymes by continuous tissue culture cell lines of human acute myelogenous leukemias (AML). ASCO 12$^{th}$ Annual Meeting. ASCO Journal, 17:238A, 1976.

16.A France DS, Greenberger JS, Moloney WC. Salmonella typhosa endotoxin-induced elevation of mouse and rat colony stimulating factor (CSF) activity: Effect on normal bone marrow (NBM) and acute myelogenous leukemia (AML) cells grown in diffusion chambers. Am Soc Microbiol Annual Meeting. Proc. Am. Soc. Microbiol., May 1976.

17.A Greenberger JS, Campos-Neto A, Rosenthal DS, Parkman R, Schlossman SF, Moloney WC. The use of purified antilysozyme antibody in the differential diagnosis of human and rat acute leukemias. Clinical Res, 24:310A, 1976.

18.A Greenberger JS, Chaffey JT, Rosenthal DS, Moloney WC. Splenic irradiation for painful splenomegaly in myeloid metaplasia: A practical alternative to splenectomy. ASTRO Meeting. Int. J. Rad, Oncol, Biol & Phys, 7:17A, 1976.

19.A Hassan LR, Greenberger JS, Karpas A, France DS, Moloney WC. Induction of leukocyte alkaline phosphatase (LAP) in acute myelogenous leukemia-derived cell lines by growth in diffusion chambers. Proc Am Soc Hemat, Boston, MA. Blood, 57:117A, 1976.

20.A Lockwood CJ, Greenberger JS, Moloney WC. Treatment of advanced Wistar/Furth rat acute myelogenous leukemia (W/Fu AML) with total body irradiation (TBI) and syngeneic bone marrow transplant. Clinical Res, 24:632A, 1976.

21.A Greenberger JS, Lockwood CJ, Muse MB, Moloney WC. Total body irradiation and syngeneic bone marrow transplant of Wistar/Furth (W/Fu) rat acute myelogenous leukemia (AML): A model for BMT in human AML. InT J Rad Onc Biol Phys, 2:Supp l, p. 72-73, 1977.

22.A Greenberger JS, Karpas A, Gans PJ, Moloney WC. Proliferation of myeloblasts and promyelocytes from untreated patients with acute myelogenous leukemia (AML) in diffusion chambers implanted into irradiated rats: Characterization of secondarily derived tissue culture lines. ASCO 13th Annual Meeting. Proc. ASCO, 18:280A, 1977.

23.A Greenberger JS, Muse MB, Moloney WC. Treatment of Wistar/Furth rat acute myelogenous leukemia (AML) with intravenous (IV) bolus versus continuous infusion chemotherapy with adriamycin, neocarcinostatin, cytosine arabinoside, or methyl-CCNU: Comparison to total body irradiation and syngeneic bone marrow transplant. AACR 68th Annual Meeting. Proc. AACR, 18:79A, 1977.

24.A Greenberger JS, Karpas A, Gans PJ, Moloney WC. Proliferation of promyelocytes and myeloblasts from patients with acute myelogenous leukemia (AML) in diffusion chambers implanted intraperitoneally into irradiated rats: Characterization of states of maturation arrest in secondarily derived continuous tissue culture lines. Int Assoc For Com Res In Leuk And Related Dis, 8th Int Symposium, Amsterdam. Proc. I.A.C.R.L.R.D., 7:135A, 1977.

25.A Gans PJ, Greenberger JS, King V, Moloney WC. Cure of candida parapsilosis infection in human leukemia tissue culture cells by growth in millipore diffusion chambers (DCS) intraperitoneally implanted into irradiated rats. ASM Annual Meeting, New Orleans. Proc. A.S.M., 18:17A, 1977.

26.A Greenberger JS, Gans PJ, Muse MB, Moloney WC. Synthesis of biochemically active lysozyme by human chronic myelogenous leukemia (CML) cells *in vitro*. Clinical Res, 25:662A, 1977.

27.A Warren W, Greenberger JS, Muse MB, Moloney WC. Quantitation of immature granulocytic cells in peripheral blood and marrow of mice with Friend virus induced plenic erythroleukemia. Clinical Res, 25:662A, 1977.

28.A Greenberger JS, Karpas A, Neumann H, Moloney WC. *In vitro* induction of myeloid differentiation in human acute leukemia derived continuous tissue culture lines. Blood, 50:Suppl., 1:200, 1977.

29.A Greenberger JS, Crocker AC, Jaffe N, Cassady JR. Treatment and end results in 139 patients with histiocytosis. ASCO Washington DC. Proc. ASCO, 8:399A, 1978.

30.A Stillman R, Schiff I, Jaffe N, Traggis D, Li F, Greenberger JS. Ovarian failure following cancer therapy in the prepubertal female. ASCO Washington DC. ASCO, 9:399A, 1978.

31.A Greenberger JS, Davisson PB, Gans PJ. Rapid induction of colony stimulating activity (CSA) independent granulocytic colonies in purified bone marrow myeloid cells by *in vitro* infection with RNA Type-C viruses. AACR Washington DC. ASCO, 9:399A, 1978.

32.A Ungerleider RS, Griffin MJ, Greenberger JS, Moloney WC, Deisseroth AB. Hematopoietic differentiation in leukemic myeloid X erythroid somatic cell hybrids. AACR Washington DC 1978, p. 82.

33.A Greenberger JS, Davisson PB, Gans PJ. A primary target demonstrating a biologic effect of RNA Type-C leukemia virus infection is the committed granulocyte-macrophage progenitor cell. Clinical Res, 28:347A, 1978.

34.A Franklin KW, Greenberger JS, Moloney WC. Suppression of normal bone marrow (NBM) granulopoiesis by cocultivation in diffusion chambers with clonal acute myelogenous leukemia (AML) cells or activated macrophages. AFCR National Meeting. Clinical Res, 28:347A, 1978.

35.A Stillman R, Schiff I, Jaffe N, Traggis D, Li F, Greenberger JS. Ovarian failure following cancer therapy in the prepubertal female. Am Soc Pediatrics, April 1978.

36.A Gobel R, Chaffey JT, Greenberger JS, Larsen R, Goodman RL. Treatment planning decreases treatment complications in thyroid cancer. Proc. ASTR, p. 76, 1978.

37.A Greenberger JS, Cassady JR, Crocker A, Jaffe N. Dose response relationship in radiation therapy of 127 patients with multifocal eosinophilic granuloma, Hand Schuller Christian Disease and Letterer-Siwe Disease. Int J Rad Oncol Biol Phys, 4: Suppl. #1;81A, 1978.

38.A Greenberger JS, Gans PJ, Godffrey ME. Induction of granulocytic leukemia in long-term bone marrow culture by Friend or Abelson leukemia virus. AFCR Eastern Division. Clinical Res 26:618A, 1978.

39.A Blum R, Wilson RE, Greenberger JS, Corson M. Combined approach to treatment of high-grade soft tissue sarcomas. Combined Modalities Conference. Hilton Head, SC. Proc. Am. Soc. Surgery, p. 78, November 1978.

40.A Greenberger JS. Unique corticosteroid-dependent, insulin-resistant lipogenesis in bone marrow preadipocytes is associated with long-term *in vitro* hematopoiesis. ASH, December 1978, New Orleans; Blood, 52 (5):Suppl. #1:226A, 1976.

41.A Greenberger JS, Davisson PB, Gans PJ, Godffrey MD, Moloney WC. Biological characterization of continuous promyelocytic leukemia cell lines induced *in vitro* in long-term bone marrow culture by Friend leukemia virus (FLVA) or Abelson leukemia virus (ALV). ASH, December 1978; Blood, 52(5):Suppl.#1:285A, 1976.

42.A Newburger PE, Cohen HL, Greenberger JS. Biochemical correlates to differentiation of human leukemia cell line HL60. ASH, December 1978, New Orleans; Blood, 52(5): Suppl. #1:229A, 1978.

43.A Greenberger JS, Davisson P, Gans P. Distinguishable biologic effects of RNA Type-C murine leukemia and sarcoma viruses in long-term bone marrow culture. Proc. VIIIth International RES Congress, Jerusalem: J Reticuloendothel, 23:36A, 1978.

44.A Greenberger JS, Sakakeeny MA, Yu D, Berentson KA. Spontaneous induction of endogenous ecotropic retrovirus in long-term bone marrow culture during spontaneous granulocytic leukemogenesis. Am Soc Microbiol Annual Meeting. Proc. A.S.M., Vol. 8, May 1979.

45.A Greenberger JS, Donahue D, Sakakeeny MA, Berentson K. High frequency spontaneous induction of ecotropic endogenous retrovirus correlates with generation of preleukemia in granulopoietic long-term mouse bone marrow cultures. Proc. AACR, 20:13A, 1979.

46.A Greenberger JS, Yu D, Donahue D, Sakakeeny M, Berentson K. Acute myelogenous leukemia (AML) induced in long-term bone marrow cultures by temperature sensitive (Ts) mutants of Rauscher murine leukemia virus demonstrates Ts-reversible granulocyte differentiation. Clinical Res, 27:269A, 1979.

47.A Greenberger JS. Corticosteroid-dependence of human bone marrow preadipocyte differentiation. Tissue Culture Assn., 30$^{th}$ Annual Meeting. *In vitro*, 15(3):201A, 1979.

48.A Greenberger JS. Corticosteroids induce proliferation of hemopoietic stem cells and adipocytes and stimulate leukemogenesis in long-term bone marrow culture. The 8$^{th}$ Annual ICN-UCLA Symposia; J Supramolec Str, Suppl. #3:225A, 1979.

49.A Newburger PE, Chovaniec ME, Greenberger JS, Cohen HJ. Functional myeloid differentiation in human promyelocytic leukemia cell line HL60. Clinical Res, 27:302A, 1979.

50.A Greenberger JS, Donahue D, Sakakeeny MA. Induction of ecotropic endogenous murine leukemia virus in bone marrow cultures from high leukemia-incidence mouse strains. The 8$^{th}$ Annual ICN-UCLA Symposia. Supramolec Str, Suppl. #3:152A, 1979.

51.A Greenberger JS, Donahue D, Sakakeeny MA. Marrow macrophages are a primary target for infection and transformation by murine sarcoma viruses and show altered production of humoral mediators of hemopoiesis following infection with murine leukemia virus. The 8$^{th}$ Annual ICN-UCLA Symposia; J Supramolec Str, Suppl. #3:298A, 1979.

52.A Bast R, Feeney M, Greenberger JS, Knapp R. Elimination of leukemia cells from rat bone marrow using antibody and complement. Proc. AACR 20:239A, 1979.

53.A Greenberger JS, Sakakeeny MA, Parker CM. *In vitro* proliferation of hemopoietic stem cells in long-term marrow culture: Principals in mouse applied to man. Autologous Marrow Conference, Keystone, CO. Proc. Symposia on Autologous Marrow Transplant, p. 298, March 1979.

54.A Greenberger JS, Weichselbaum RR, Botnick LE, Sakakeeny MA, Moloney WC, Hellman S. Radiation therapy and bone marrow transplantation in rodent models of acute myelogenous leukemia: *In vitro* radiosensitivity of granulocytic leukemia cells and chronic effects of chemotherapy on the hemopoietic microenvironment *in vivo*. Autologous Marrow Conference, Keystone, CO. Proc. I.C.U.C.L.A. Symposia, p. 225, March 1979.

55.A Greenberger JS, Weichselbaum RR, Karpas A, Schmitt A, Little JB, Moloney WC. Radiosensitivity of human hematopoietic cell lines of distinguishable stages of biochemical and physiological differentiation. ASTR; Int J Rad Oncol Biol Med, 5: Suppl. #2:80A, 1979.

56.A Greenberger JS. Murine leukemia virus stimulated *in vitro* granulocyte-macrophage progenitor cell colony formation is by induction of colony stimulating factor. Clinical Res, 27(3): 583A, 1979.

57.A Greenberger JS, Sakakeeny MA, Berentdson KA. Stromal and hemopoietic stem cell requirements for *in vitro* granulocytic leukemogenesis by Friend virus. Clinical Res, 27(3):583A, 1979.

58.A Greenberger JS. Stromal cell and hemopoietic stem cell interactions during *in vitro* leukemogenesis by murine leukemia viruses. AAAS, San Francisco, 1980, Section N. Proc. A.A.A.S., p. 76, 1980.

59.A Greenberger JS, Eckner R, Sakakeeny MA. Fv-2 locus sensitivity of both stromal and hemopoietic stem cells is required for Friend leukemia virus (FLV) leukemogenesis *in vitro*. ASH Meeting. Blood, 54: Suppl. #1:171A, 1979.

60.A Greenberger JS, Sakakeeny MA, Berentson KA. Corticosteriods induce evolution of pluripotent hemopoietic stem cells from adherent stromal cells in long-term bone marrow cultures. ASH 1979; Blood, 54: Suppl. #1:171A, 1979.

61.A Newburger PE, Pagano JS, Greenberger JS, Karpas AK, Cohen HJ. Dissociation of opsonized particle phagocytosis and respiratory burst activity in an Epstein-Barr virus-infected myeloid cell line. ASH 1979. Blood, 54: Suppl. #1:77A, 1979.

62.A Weichselbaum RR, Greenberger JS. Radiosensitivity of human hemopoietic cell lines of distinguishable stages of biochemical and physiological differentiation. ASH 1979; Blood, 54: Suppl. #1:77A, 1979.

63.A Mauch PM, Greenberger JS, Botnick LE, Hannon E, Hellman S. Heterogeneity of self renewal potential of hemopoietic stem cell cultures *in vitro*. ASH 1979. Blood, 54: Suppl. #1:157A, 1979.

64.A Greenberger JS. Distinguishable classes of murine leukemia virus transformation of hemopoietic stem cells in long-term bone marrow cultures are related to recombinant regions of the viral genome. Keystone ICN-UCLA Symposia Animal Virus Genetics 1980; J Supramolec Str, Suppl. #4:793A, 1980.

65.A Greenberger JS, Sakakeeny MA. Long-term culture of murine bone marrow *in vitro* reveals significant genotypic variation in longevity of hematopoiesis. Keystone Conference Cell Growth and Control of Cell Division. Proc. ICN-UCLA Symposia, p. 87, 1980.

66.A Greenberger JS, Sakakeeny MA. Induction of acute myelogenous leukemia *in vitro* by Friend leukemia virus requires early hemopoietic stem cells. Proc. RES, Anaheim, CA. Proc. RES, 7:86A, 1980.

67.A Greenberger JS, Eckner RJ, Sakakeeny MA. Stable association of the spleen focus-forming virus (SFFV) genome in mouse acute promyelocytic leukemia (APML) cell lines induced by Friend leukemia virus *in vitro*. Soc Exp Biol Med Meeting, Anaheim, CA. Proc. Soc. Exp. Biol. Med , p. 76, 1980.

68.A Greenberger JS, Eckner RJ. Acute promyelocytic leukemia (APML) cell lines induced by Friend leukemia virus (FLV) in long-term marrow cultures release spleen focus forming virus (SFFV). Am Soc Microbiol Meeting. Proc. Am. Soc. Microbiol., Vol. 83, 1980.

69.A Greenberger JS, Sakakeeny MA. Longevity of hemopoiesis in long-term bone marrow cultures is influenced by mouse strain genotype. Keystone ICN-UCLA Symposia on Growth Factors 1980: J Supramolec Str, Suppl. #4:575A, 1980.

70.A Cohen GI, Canellos GP, Greenberger JS. An *in vitro* assay for the effect of chemotherapy on bone marrow stromal cell support of donor hemopoietic stem cell proliferation. Keystone ICN-UCLA Symposia on Bone Marrow Transplantation 1980; J Supramolec Str, Suppl. #4:199A, 1980.

71.A Greenberger JS, Eckner RJ, Ostertag W, Colletta G, Sakakeeny MA. Stable association of the spleen focus-forming virus (SFFV) genome in mouse acute promyelocytic leukemia (APML) cell lines induced by Friend virus *in vitro*. Clinical Res, 28:312A, 1980.

72.A Greenberger JS, Wroble LM, Sakakeeny MA. Murine leukemia viruses and phorbol myristate acetate induce macrophage production of granulocyte-macrophage colony stimulating factor *in vitro*. Proc. A.A.C.R., 8:310A, 1980.

73.A Cohen GI, Canellos GP, Skarin A, Greenberger JS. *In vitro* quantitation of chemotherapy effects on bone marrow stromal cell support of engrafted hematopoietic stem cells. Proc. A.A.C.R., 7:315A, 1980.

74.A Antman K, Blum R, Corson J, Wilson R, Greenberger JS, Ash A, Frei E. Effective adjuvant chemotherapy for localized soft tissue sarcoma. Proc. A.A.C.R., p. 141, 1980.

75.A Nabel G, Fresno M, Greenberger JS, Cantor H. Immunologic and hematopoietic induction by a helper T-lymphocyte clone. IVth International Congress of Immunology, Paris, 1980.

76.A Greenberger JS, Sakakeeny MA, Newburger PE. Phorbol myristate acetate stimulates macrophage production of granulocyte-macrophage colony stimulating factor and alters macrophage function in long-term bone marrow cultures. ISH/ISBT, Montreal, Canada. Proc. I.S.H./I.S.B.T., Vol. 6, 1980.

77.A Greenberger JS, Weichselbaum RR, Schmidt A, Sakakeeny MA, Little JB. Radiation sensitivity of mouse bone marrow hemopoietic and stromal cells: Evidence for subpopulations with density-dependent survival characteristics. Int. J. Rad Oncol Biol. & Phys., p. 86, 1980.

78.A Gordon W, Antman KH, Greenberger JS, Kaplan W, Weichselbaum RR, Koster K, Chaffey JT. Radiation therapy in the management of patients with mesothelioma. ASTR, 1980.

79.A Greenberg HM, Goebel R, Weichselbaum RR, Greenberger JS, Cassady JR. Radiation therapy for the treatment of benign locally aggressive fibromatosis. ASTR Meeting. Int. J. Rad. Oncol. Biol. & Phys., p.8, 1980.

80.A Nabel B, Fresno M, Greenberger JS, Cantor H. Immunologic and hematologic induction by a helper T-lymphocyte clone. ASCI; Clinical Res, 28:507A, 1980.

81.A Greenberger JS, Sakakeeny MA. Longevity of hemopoiesis in long-term bone marrow cultures is influenced by mouse strain genotype *in vitro*. Tissue Culture AFCA Proceedings, 173:258A, 1980.

82.A Cohen GI, Sakakeeny MA, Said J, Canellos GP, Greenberger JS. Effect of adriamycin and BCNU on engraftment and maintenance of purified bone marrow stromal cell cultures. Clinical Res, 28:634A, 1980.

83.A Greenberg HM, Newburger PE, Parker LM, Greenberger JS. Generation of functionally normal human polymorphonuclear leukocytes in corticosteroid-enriched continuous bone marrow culture. Clinical Res, 28:635A, 1980.

84.A Greenberg HM, Newburger PE, Parker LM, Greenberger JS. Generation of physiologically normal human granulocytes in continuous bone marrow cultures. Tampa, FL, 17th Annual RES, 120:20A, 1980.

85.A Greenberger JS, Chang J, Boschetti S, Moloney WC. Effects of daily low dose fraction gamma radiation on growth and differentiation of fresh human myeloid leukemia and preleukemic bone marrow cells in diffusion chambers. Am Rad Soc, Vol. 16, September 1980.

86.A Greenberger JS, Sakakeeny MA. Effect of spleen focus-forming virus (SFFV) on duration of hemopoiesis, generation of mixed progenitor cell suspension cultures and cloned permanent WEHI-3 conditioned medium (CM)-dependent cell lines *in vitro*. ASM Meeting. Proc. A.S.M., p. 793, 1981.

87.A Greenberger JS, Jaenesch R, Shadduck R, Sakakeeny MA. Generation of permanent self renewing granulocyte-macrophage colony forming unit culture (GM-CSFc) cell lines from long-term bone marrow cultures of BALB/Moloney (Mo) mice. AACR Meeting. Proc. A.A.C.R., 731:82A, 1981.

88.A Greenberger JS, Novak T, Greenberg H, Sakakeeny MA. A clonogenic assay for human marrow adipocyte colony forming cells (CFUa). AFCR National Meeting. Clinical Res, 29(2):334A, 1981.

89.A Greenberger JS, Sakakeeny MA, Novak T, Hoffman N. Effect of Friend spleen focus forming virus (SFFV) on generation of WEHI-3 growth factor dependent hematopoietic progenitor cell lines from continuous mouse bone marrow culture. Proc. F.A.S.E.B, p. 793, May 1981.

90.A Greenberger JS, Sakakeeny MA, Novak T, Hoffman N. Effect of Friend spleen focus forming virus (SFFV) on generation of WEHI-3 growth factor dependent hematopoietic progenitor cell lines from continuous mouse bone marrow cultures. Keystone ICN-UCLA Symposia Proceedings, Vol. 6, 1981.

91.A Greenberger JS. Murine leukemia virus effects on WEHI-3 conditioned medium-dependent hematopoietic progenitor cell lines. Int Congress of Virology Proceedings, p. 871, 1981.

92.A Greenberger JS, Sakakeeny MA, Novak T, Hoffman N. Effect of murine leukemia viruses (MuLVs) on WEHI-3 conditioned medium-dependent hematopoietic progenitor cell lines. Tissue Culture Assn, Washington, DC. *In vitro*, p. 76, 1981.

93.A Greenberger JS. Effects of murine leukemia viruses on long-term murine bone marrow cultures and derived WEHI-3 conditioned medium-dependent hemopoietic progenitor cell lines. IACRLRD Meeting. Proc. I.A.C.R.L.R.D., 76:83A, 1981.

94.A Greenberger JS, Sakakeeny MA, Hoffman N, Novak T. Effects of murine leukemia viruses on generation of continuous cell lines of pluripotential hematopoietic stem cells *in vitro*. Int. Soc for Exp Hematol Meeting. Exp. Hematol., 6:763A, 1981.

95.A Greenberger JS, Sakakeeny MA, Hoffman N, Novak T. Effects of murine leukemia viruses on granulopoiesis in continuous mouse bone marrow cultures and generation of WEHI-3 conditioned medium-dependent pluripotential cell lines. Cellular and Molec Biol of Stem Cell Diff, Vol. 8, September 1980.

96.A Greenberger JS, Eckner RJ, Otten J, Tennant R. Kinetics of repair of total body irradiation damage to marrow stromal cells quantitated *in vitro* by hematopoiesis and leukemogenesis in long-term bone marrow cultures. ASTR Meeting. Int. J. Rad. Oncol. Biol. & Phys., 7:31A, 1981.

97.A Greenberger JS, Antman KH, Corson JM, Wilson R. Radiation therapy in the management of angiosarcoma of the breast. Cancer, 50:2000-2003, 1982.

98.A Greenberger JS, Nabel G, Sakakeeny MA, Cantor H. Characterization of a molecule produced by WEHI-3 cells and cloned Lyl+2- normal inducer T-cells that stimulates self-renewal of multipotential or committed granulocyte-macrophage and mast cell/basophil progenitor cells *in vitro*. Milwaukee. Proc. of RES, 3:76A, 1981.

99.A Greenberger JS, Newburger PE, Sakakeeny MA, Hoffman N, Kuras S. Transfusion of granulocytes derived from permanent lines of factor-dependent granulocyte-macrophage progenitor cells. Proceedings of AFCR Eastern Meeting. Clinical Res., 63:107A, 1981.

100.A Greenberger JS, Humphries K, Eckner RJ, Eaves C, Sakakeeny MA. Demonstration of a permanent multipotential hematopoietic progenitor cell line producing erythroid (BFUe), neutrophilic granulocyte macrophage (GM-CSFc), and basophil/mast cell (CFU-M) colonies *in vitro*. Proceedings of AFCR Eastern Meeting. Clinical Res., 8:63A, 1981.

101.A Greenberger JS, Kuras S, Hoffman N, Newburger PE. Granulocyte support therapy of lethally and sublethally irradiated bacterial infected mice with permanent cell lines of granulocyte-macrophage progenitor cells. Proc. Am Radium Soc, 31:42A, 1982.

102.A Greenberger JS, Hapel A, Lee JC, Nabel G, Sakakeeny MA, Cantor H, Ihle J. Identification of a 41,000 MW glycoprotein (Interleukin-3) that stimulates self-renewal of cloned lines of multipotential hematopoietic stem cells, granulocyte-macrophage progenitor cells, bone marrow and spleen-derived mast cell/basophil progenitor cells and stimulates GM-CFUc and BFUe formation by fresh mouse bone marrow. Blood, 58: Suppl. #1:109A, 1981.

103.A Greenberger JS, Humphries K, Sakakeeny MA, Eckner RJ, Ihle J, Eaves C, Cantor H, Denberg J, Nabel G. Demonstration of a permanent line of self-renewing multipotential hematopoietic stem cells *in vitro*. ASH 1981; Blood, 58: Suppl. #1:97A, 1981.

104.A Greenberger JS, Sakakeeny MA, Marks P, Novak T. A permanent mouse bone marrow stromal cell line demonstrates hematopoietic stem cells *in vitro*. ASH Meeting. Blood, 58: Suppl. #1:174A, 1981.

105.A Greenberger JS, Otten JA, Tennant RW. Effects of total body irradiation on long-term hematopoiesis in bone marrow cultures derived from leukemia-prone RfM/UN mice. Blood, 58: Suppl. #1:123A, 1981.

106.A Cohen GI, Greenberger JS. BCNU-induced stromal defect impairs murine long-term hemopoiesis *in vitro*. ASH Meeting. Blood, 58: Suppl. #1:172A, 1981.

107.A Greenberger JS, Eckner RJ, Hetrick K, Hoffman N, Marks P, Novak T, Sakakeeny MA. Effects of Friend spleen focus forming virus on self-renewal capacity of pluripotential hematopoietic cells *in vitro* and *in vivo*. Proc. ASM, 3:102A, 1982.

108.A Greenberger JS, Ihle J, Nabel G, Hapel A, Sakakeeny MA. The effect of Interleukin-3 on self-renewal in suspension of multipotential hematopoietic progenitor cells. Proc. ICN-UCLA Symposia, 6:72A, 1982.

109.A Weichselbaum RR, Sakakeeny MA, Schmidt A, Little JB, Greenberger JS. *In vitro* radiation sensitivity of CSF-dependent murine hematopoietic stem cells and stromal supportive cells differ significantly. Proc. ICN-UCLA Symposia, 88:291A, 1982.

110.A Greenberger JS, Eckner RJ, Sakakeeny MA, Hetrick K, Hoffman N, Marks P, Novak T. Effects of murine leukemia virus infection on self-renewal of pluripotential hematopoietic stem cells *in vitro* and *in vivo*. Proc. AACR, 6:142A, 1982.

111.A Greenberger JS, Sakakeeny MA, Novak T, Marks P, Reid D. Interleukin-3 stimulates unlimited self renewal of cloned lines of eosinophil progenitor cells *in vitro*. Proc. F.A.S.E.B., p. 83, 1982.

112.A Greenberger JS, Hoffman N, Sakakeeny MA, Novak T, Marks P, Eckner RJ. Friend murine leukemia virus increases the pool size of pluripotential stem cells with no detectable increase in self-renewal capacity. Washington, DC. Proc. A.F.C.R., p. 891, 1982.

113.A Caramatti RK, Shadduck RK, Waheed A, Greenberger JS. Comparative effects of colony stimulating factor (CSF) on normal and leukemic marrow cells. Blood, 58: Suppl. #1:120A, 1981.

114.A Waheed A, Shadduck RK, Greenberger JS, Dexter TM. Production of colony stimulating factor (CSF) in long-term marrow cultures. Blood, 58: Suppl. #1:117A, 1981.

115.A Greenberger JS, Sakakeeny MA, Eckner RJ, Ihle J, Marks P, Reid D. Differentiation-inducible and non-inducible Interleukin-3 (IL-3) dependent hematopoietic progenitor cell lines derived from retrovirus-infected continuous mouse bone marrow cultures. Int Soc Exp Hemat Meeting. Exp. Hematol., 31:73A, 1982.

116.A Greenberger JS, Eckner RJ, Botnick L, Sakakeeny MA, Marks P. Establishment of stable radiation chimerias using donor bone marrow from Friend virus-infected continuous marrow cultures: A model for amplification of normal CFUs by genetic sequences of spleen focus forming virus. Proc. A.S.T.R. Meeting. Int. J. Rad. Oncol. Biol. & Phys., p. 76, 1982.

117.A Greenberger JS, Marks P, Sakakeeny MA, Reid D. Development of permanent factor dependent multipotential hematopoietic stem cell lines resistant to L-Phenylalanine mustard (L-PAM). Proc. AFCR Eastern Meeting. Clinical Res., 81:17A, 1982.

118.A Greenberger JS, Nadler LM, Lipton J, Ritz J, Novak T. Effects of monoclonal antibodies B1, J5 (CALLA) and B2-microglobulin and complement on maintenance of the hematopoietic microenvironment and generation of hematopoietic progenitor cells in human continuous bone marrow cultures. Proc. A.F.C.R. Eastern Meeting. Clinical Res., 30:69A, 1982.

119.A Greenberger JS, Sakakeeny MA, Marks P, Reid D. Alkylating agent (L-Phenylalanine mustard) resistant permanent factor dependent multipotential hematopoietic stem cell lines. ASH Meeting, Washington, DC. Blood, 60: Suppl. #1:98A, 1982.

120.A Bjorenson BJ, Greenberger JS. Eosinophil progenitor cells in human continuous bone marrow culture. ASH Meeting, Washington, DC. Blood, 60: Suppl. 1:94A, 1982.

121.A Upchurch KS, Cohen G, Greenberger JS, Krane SM. Hormonal responsiveness of continuous bone marrow-derived adherent cells: Evidence for an osteoclast precursor. Blood, 60: Suppl. #1:105A, 1982.

122.A Lipton JM, Greenberger JS, Nadler LM, Ritz J, Novak T, Socolow J. Distribution of B1, and hematopoiesis supporting cells (HSC) in short and long-term cultures. ASH Meeting. Washington, DC. Blood, 60: Suppl. #1:170A, 1982.

123.A Greenberger JS, Krensky AM, Socolow JS, Burakoff SJ. Production of colony stimulating factor (CSF) for granulocyte-macrophage progenitor cells (GM-CFUc) by TCGF-dependent clones of human T-lymphocytes. AACR Proceedings, p. 211, Abstract #834, 1983.

124.A Greenberger JS, Krensky AM, Socolow JS, Burakoff SJ. Production of a lymphokine with CSF activity by clones of TCGF-dependent humanT-lymphocytes. AFCR National Meeting. Clinical Res, 31(2):313A, 1983.

125.A Pomfret E, Antman K, Corson J, MacIntyre J, Price K, Greenberger JS, Collins J. Intensive treatment of patients with malignant mesothelioma (MM). AACR Proceedings, p. 156, Abstract #619, 1983.

126.A Antman K, Suit H, Amato D, Corson J, Wood W, Proppe K, Harmon D, Carey R, Greenberger J, Blum R, Wilson R. Preliminary results of a randomized trial of adjuvant (ADJ) adriamycin (ADR) for sarcomas (S):

Lack of apparent difference between treatment groups. 4TH Int. Conference onthe Adjuvant Therapy of Cancer. Proc. A.S.C.O., 63:236A, 1983.

127.A Antman K, Wood W, Price K, Amato D, Corson J, Suit H, Proppe K, Harmon D, Carey R, Greenberger JS, Wilson R. A comparison of randomized versus concurrent controls. AACR Proceedings, p. 146, Abstract #577, 1983.

128.A Greenberger JS, Sakakeeny MA, Eckner RJ, Reid D. Effects of Friend spleen focus forming virus on pluripotential hematopoietic stem cells *in vitro* and generation of factor dependent permanent hematopoietic progenitor cell lines. Proc. I.A.C.R.L.R.D., 67:73A, 1983.

129.A Greenberger JS, Reid D, Sakakeeny MA. Biologic properties of L-Phenylalanine mustard (L PAM) resistant clones of Interleukin-3 (IL-3) dependent multipotential (erythroid/basophil-mast cells/neutrophil) hematopoietic progenitor cell lines. Cambridge, England, Proc. I.A.E.H., 17:793A, 1983.

130.A Greenberger JS, Lipton J, Ritz J, Nadler LM, Griffin J, Rothstein L. Effects of monoclonal antibodies J5, J2, Ia, B1, B2-microglobulin and MY906 on the hematopoietic microenvironment in human continuous bone marrow cultures. Cambridge, England, Proc. I.A.E.H., 18:6A, 1983.

131.A Greenberger JS, Ritz J, Griffin J, Nadler LM, Rothstein L, Sakakeeny MA. Production of hematopoietic progenitor cells in human continuous bone marrow cultures as a potential resource for marrow transplant recipients: Technical improvements. ASTR, Los Angeles, CA; Int J Rad Oncol Biol Phys, 9: Suppl. #1:129A, 1983.

132.A Key L, Weichselbaum RR, Rothstein L, Carnes D, Anast C, Greenberger JS. 1,25(OH) {2} Vitamin D{3} stimulates human marrow to produce a factor which increases *in vitro* bone resorption. Los Angeles, CA., Int. J. Rad.Oncol. Biol. & Phys., 73A(Suppl. #1):93A, 1983.

133.A Greenberger JS, Key L, Carnes D, Anast C, Weichselbaum R, Rothstein L. 1,25(OH) {2} D{3} induces adipocyte differentiation and production of a bone resorbing factor by human bone marrow stromal cells in continuous marrow culture. AFCR Eastern; Clinical Res, 32:686A, 1983.

134.A Cassady RS, Daugherty C, Greenberger JS. Spontaneous morphologic differentiation of Interleukin-3 dependent hematopoietic progenitor cell lines is greater with multipotential compared to unipotential lines. AFCR Eastern; Clinical Res, 31:685A, 1983.

135.A Greenberger JS, Klassen V, Reid D, Kase K, Sakakeeny MA. Low-dose-rate irradiation stabilized bone marrow stromal cell synthesis of GM-CSF, and a distinct factor required for formation of multipotential stem cell colonies. ASH 1983; Blood, 62: Suppl. #1:135A, 1983.

136.A Greenberger JS, Key L, Carnes D, Anast C, Weichselbaum R, Rothstein L. 1,25(OH) {2} Vitamin D{3} induces dose dependent adipocyte differentiation and production of a bone resorbing factor (BRF) by a clonal marrow preadipocyte cell line or stromal cells in human or mouse continuous marrow culture. ASH Meeeting. Blood, 62: Suppl. #1:150A, 1983.

137.A Greenberger JS, Messner H, Krensky A, Burakoff SA, Sakakeeny MA. Production of CSF for human multipotential hematopoietic colony forming cells (CFU-GEMM) [granulocyte/erythroid/macrophage/megakaryocyte) by cloned IL-2 dependent human T-cell lines. ASH Meeting. Blood, 62: Suppl. #1:135A, 1983.

138.A Greenberger JS, Klassen V, Reid D, Kase K, Sakakeeny MA. Low-dose-rate irradiation physiologic effects on purified bone marrow stromal cells *in vitro*. Radiation Research Meeting, Orlando, FL, Radiation Res., 7:631A, 1984.

139.A Greenberger JS, Klassen V, Reid D, Kase K, Sakakeeny MA. Low-dose-rate irradiation alters bone marrow stromal cell physiologic interaction with hematopoietic stem cells *in vitro*. Proc. A.A.C.R., 6:931A, 1984.

140.A Pierce JH, Rothstein L, Aaronson SA, Greenberger JS. Effects of infection with amphotropic murine leukemia virus on hematopoiesis in human continuous bone marrow cultures. Proc. A.S.C.O., 7:32A, 1983.

141.A Greenberger JS, Klassen V, Donnelly T, FitzGerald TJ, Naparstek E, Sakakeeny MA. Low-dose-rate x-irradiation induced decrease in growth factor production by plateau phase cloned bone marrow stromal cells persists after repair of proliferative damage. AFCR National Meeting. Clinical Res, 32:(2):309A, 1984.

142.A Pierce JH, Rothstein L, Aaronson SA, Greenberger JS. Amphotropic murine leukemia virus (MuLV) pseudotypes of transforming virus genomes induce Epstein-Barr virus transformed lymphoid lines from human continuous bone marrow cultures. AFCR National Meeting. Clinical Res, 32:(2):309A, 1984.

143.A DeFabritiis P, Bregni M, Greenberger JS, Lipton J, Nadler L, Korbling M, Schlossman SF, Ritz J, Bast RC Jr. Elimination of malignant clonogenic Burkitt's lymphoma cells from human bone marrow using 4-hydroperoxycyclophosphamide (4HC) in combination with monoclonal antibodies and complement (C'). Proc. A.A.C.R., 6:73A, 1984.

144.A Bregni M, DeFabritiis P, Raso V, Greenberger J, Lipton J, Nadler L, Schlossman SF, Ritz J, Bast RC Jr. Elimination of clonogenic Burkitt's lymphoma cells from human bone marrow using a combination of monoclonal immunotoxins reactive with different tumor cell surface determinants. Proc. A.A.R.C., 10:16A, 1984.

145.A Newburger PE, Speier C, Greenberger JS. Long-term bone marrow culture in Chediak-Higashi syndrome (CHS). Society for Pediatric Research, 18:245A, 1984.

146.A Greenberger JS, Pierce JH, Rothstein L, Aaronson SA. Amphotropic murine leukemia virus (MuLV) pseudotypes of transforming virus genomes demonstrate high efficiency infection of stromal and hematopoietic stem cells in human continuous bone marrow cultures. ISEH Meeting, Atlanta, GA. Exp Hematol, 12(6):338A, 1984.

147.A Greenberger JS, Naparstek E, Donnelly T, Klassen V, Kase K. Demonstration of a new form of x-irradiation damage in bone marrow stromal cells that is expressed as physiologic alteration of support for hematopoietic stem cells. ASTRO Meeting, Washington, DC. Int J Rad OncolBiol Phys, 10: Suppl. #2:120A, 1984.

148.A Greenberger JS, Sakakeeny MA, Naparstek E, Ihle J, Humphries KC, Messner H, Reid DM. Comparison of hematopoietic effects of homogeneously purified murine Interleukin-3 with a molecularly cloned gene product from inducer T-cells. ISEH Meeting, Atlanta, GA. Exp Hematol, 12(6):415A, 1984.

149.A FitzGerald T, Greenberger JS, Sakakeeny MA. Radiosensitivity of some human leukemia cells can vary with dose rate. ISEH Meeting, Atlanta, GA. Exp Hematol, 12(6):426A, 1984.

150.A FitzGerald TJ, Rothstein L, Greenberger JS. Effect of x-ray dose rate on the clonagenic survival of normal human granulocyte-macrophage hematopoietic progenitor cells (GM-CFUc) *in vitro*. ISEH Meeting, Atlanta, Georgia. Exp Hematol, 12(6):449A, 1984.

151.A Naparstek E, Greenberger JS. A method for study of hemopoietic effects of continuous intravenous infusion of purified or molecularly cloned and expressed murine lymphokines. ISEH Meeting, Atlanta, GA. Exp Hematol, 12(6):414A, 1984.

152.A Naparstek E, Donnelly T, Greenberger JS. The effect of x-irradiation and alkylating agents on the production of colony stimulating factor(s) by long-term bone marrow cultures. ISEH Meeting, Atlanta, Georgia. Exp Hematol, 12(6):421A, 1984.

153.A FitzGerald TJ, Rothstein L, Greenberger JS. Effect of x-ray dose rate on the clonagenic survival of normal human granulocyte-macrophage hematopoietic progenitor cells (GM-CFUc) *in vitro*. ASTRO Meeting, Washington, DC. Int J Rad Oncol Biol Phys, 10: Suppl. #2: 151A, 1984.

154.A Halpern HJ, Rosen EM, Greenberger JS, Antman K, Marck A, Wilson R. Gynecologic sarcomas treated with radiation therapy. ASTRO Meeting, Washington, DC. Int J Rad Oncol Biol Phys, 10: Suppl. #2: 160A, 1984.

155.A Rosen EM, Greenberger JS, Halpern H, Montag T, Corson JM, Wilson R, Antman K. Radiotherapy in the treatment of liposarcoma. ASTRO Meeting, Washington, DC. Int J Rad Oncol Biol Phys, 10: Suppl. #2: 109A, 1984.

156.A Goodall J, Cassady R, Klassen V, Naparstek E, Rosen E, Greenberger JS. Continued production of granulocyte-macrophage colony stimulating factor (GM-CSF) by lethally irradiated plateau phase bone marrow stromal but not smooth muscle cells *in vitro*. AFCR Eastern. Clinical Res, 32(3):696A, 1984.

157.A Klassen V, Rothstein L, Pierce JH, Aaronson SA, Greenberger JS. Amphotropic murine leukemia virus vector transfer of Harvey ras p21 gene product to human granulocyte-macrophage progenitor cells in continuous marrow culture. AFCR Eastern. Clinical Res, 32(3):697A, 1984.

158.A Greenberger JS, Pierce JH, Rothstein L, Aaronson SA. Amphotropic murine leukemia virus (Am-MuLV) vector transfer of the Harvey ras transforming gene to hematopoietic and stromal cells in human continuousbone marrow culture. ASH Meeting, Miami, FL. Blood, 64(5):Suppl. #1:202A, 1984.

159.A Naparstek E, Greenberger JS, Ihle JN, Donnelly T, Klassen V, Reid D, Sakakeeny MA. X ray/alkylating agent induced release of a leukemogenic transforming growth factor from cloned bone marrow stromal cell lines of a specific phenotype. ASH Meeting, Miami, FL. Blood, 64(5):Suppl. #1:134A, 1984.

160.A FitzGerald TJ, Kase K, Daugherty C, Rothstein L, Pierce JH, Aaronson SA, Greenberger JS. Human lung cancer onc-gene HS242 alters the high-dose-rate x-irradiation response of mammalian cells *in vitro*. Houston, TX, Proc. A.S.C.O., 7:62A, 1985.

161.A Naparstek E, FitzGerald TJ, Klassen V, Cassady RJ, Goodall J, Kase K, Greenberger JS. X irradiation induces biologic activity of a new growth factor from clonal bone marrow stromal cell lines *in vitro*. AACRProceedings, Houston, TX. Proc AACR, 26:66A, 1985.

162.A Greenberger JS, Pechenik J, Gould L, Lord A, Kase K, FitzGerald TJ. X-irradiation effects on growth and metamorphosis of gastropod larvae (Crepidula fornicata): A model for environmental radiation teratogenesis. Radiation Research Meeting, 72:736A, 1984. Archiv Env Contam and Toxicology, 15:227 234, 1986.

163.A Key L, Daugherty C, FitzGerald TJ, Schwartz J, Greenberger JS.Bone marrow stromal cell cultures from osteopetrotic mutant microophthalmic (mi/mi) mice block bone degradation by cells derived from normal marrowstem cells. Washington, DC. Proc. A.F.C.R. National., 7:17A, 1985.

164.A Greenberger JS, Rothstein L, Pierce JH, Sakakeeny MA, FitzGerald TJ, Daugherty C. Recent advances in the technology for long-term culture of human granulocytes and granulocyte progenitor cells. Seventeenth Annual Scientific Symposium in Transfusion Medicine (American Red Cross): Recent Technological Advances. Washington, DC. Proc. Symposia on RadiationBiology, 8:26A, 1985.

165.A Greenberger JS, Key L, Daugherty C, FitzGerald TJ, Schwartz J. Bone marrow stromal cell cultures from osteopetrotic mutant microophthalmic (mi/mi) mice block bone degradation by cells derived from normal marrow stem cells. ISEH Meeting, Jerusalem, Israel. Exp Hematol, 13(5):426A, 1985.

166.A FitzGerald TJ, Kase K, Nizin P, Greenberger JS, Aaronson SA. Change in the effect of x-ray dose rate on the irradiation survival of cell line NIH/3T3 infected with HS242 human oncogene. ISEH Meeting, Jerusalem, Israel. Exp Hematol, 13(5):457A, 1985.

167.A Greenberger JS, Naparstek E, FitzGerald TJ, Rothstein L, Daugherty C, Shadduck RK, Ihle JN, Sakakeeny MA. Increased cell production of growth stimulatory molecules by x-irradiated plateau phase cloned bone marrow stromal cell lines. ASTRO Meeting, Miami, FL. Int J Rad Oncol Biol Phys, 11: Suppl. #1:112-113A, 1985.

168.A Naparstek E, Wagner K, Shadduck RK, Ihle NJ, Greenberger JS. Decreased production of CSF 1 and paradoxically increased production of another GM-CSF by heavily irradiated plateau phase cultures of cloned bone marrow stromal cell lines. ISEH Meeting, Jerusalem, Israel. Exp Hematol, 13(5):373A, 1985.

169.A Daugherty C, Greenberger JS, Key L, FitzGerald TJ, Schwartz J. Osteopetrotic mutant microophthalmic (mi/mi) mouse stromal cell cultures block bone degradation by normal marrow hematopoietic stem cells. Minneapolis, MO, Proc. A.S.M., 73; (Suppl. #1):82A, 1985.

170.A Daugherty C, Sakakeeny MA, Rothstein L, FitzGerald TJ, Greenberger JS. Continuous hematopoiesis in C3H/HeJ mouse bone marrow cultures for over 1587 days (240 weeks) after infection with Friend spleen focus forming virus. Baltimore, MD, Proc. A.F.C.R. Eastern, 8:71A, 1985.

171.A FitzGerald TJ, Rothstein L, Daugherty C, Kase K, Greenberger JS. Irradiation dose rate dependent survival of human bone marrow stromal cells. AFCR Eastern, Baltimore, MD. Clinical Res, 33(3):560A, 1985.

172.A Greenberger JS, Key K, Daugherty C, FitzGerald TJ, Schwartz J. Biologic comparison of cloned bone marrow stromal cell lines from osteopetrotic mutant (mi/mi) and anemic Steel (Sl/Sld) mice: Specific clones block bone degradation by normal marrow stem cells *in vitro*. ASH Meeting, New Orleans, LA. Blood, 66(5): Suppl. #1:128A, 1985.

173.A Naparstek E, Pierce JH, Sakakeeny MA, FitzGerald TJ, Shadduck RK, Greenberger JS. High frequency induction of non-autocrine factor independent cell lines by cocultivation of GM-CSF/IL-3 dependent hematopoietic progenitor cell lines with irradiated plateau phase bone marrow stromal cells. ASH Meeting, New Orleans, LA. Blood, 66(5), Suppl.#1: 158A, 1985.

174.A Daugherty C, Sakakeeny MA, Rothstein L, FitzGerald TJ, Greenberger JS. Continuous hematopoiesis in C3H/HeJ mouse bone marrow cultures for over 1587 days (240 weeks) after infection with Friend spleen focus forming virus. Clinical Res, 33(3): 759A, 1985.

175.A Holland CA, Rothstein LE, Sakakeeny MA, Klassen V, Greenberger JS. Expression of the neomycin resistance gene in human hematopoietic progenitor cells introduced by a retroviral vector *in vitro*. ASH Meeting, New Orleans, LA. Blood, 66(5), Suppl. #1: 237A, 1985.

176.A Rybak ME, Daugherty C, Le D, FitzGerald TJ, Greenberger JS. Hematopoiesis in continuous marrow culture of the Sl/Sld congenitally anemic mouse; derivation of permanently cloned bone marrow stromal cell lines. ASH Meeting, New Orleans, LA. Blood, 66(5): Suppl. #1:134A, 1985.

177.A FitzGerald TJ, Wollin M, Zak S, LaChance M, Greenberger JS, Menon M. Radiation survival characteristics of human prostate carcinoma cell line PC-3. Am. Radium Society Proceedings, 18:7A, 1985.

178.A Naparstek E, Daugherty C, Sakakeeny MA, Greenberger JS. Ultrastructure of the stromal cell hematopoietic stem cell interaction during x-irradiation leukemogenesis *in vitro*. New Orleans, LA, Proc. S.E.M. 63:18A, 1986.

179.A Greenberger JS, Naparstek E, FitzGerald TJ, Pierce JH, Woda B, Sakakeeny MA. X-irradiation of plateau-phase cloned mouse bone factor for hematopoietic cells *in vitro*. Proceedings of AACR, 27:210A, 1986.

180.A Greenberger JS, Naparstek E, FitzGerald TJ, Woda B, Sakakeeny MA, Klassen V, Daugherty C, Pierce JH. X-irradiation induces a membrane-bound transforming growth factor from cloned lines of mouse bone marrow stroma. Radiation Res. Society Proceedings, 17:8A, 1986.

181.A FitzGerald TJ, Holland C, Harigaya K, Rothstein L, Pierce J, Woda B, Anklesaria P, Greenberger JS. Clonal human bone marrow stromal cell lines show radiation resistance at clinical low-dose-rate. Washington, DC, Proceedings of A.F.C. R. National, 7:93A, 1986.

182.A Hardy C, Kishimoto T, Harjes K, Tavassoli M, Greenberger JS. Mechanism of stem cell homing as studied by a multipotential cell line. ISEH Meeting. Exp Hematol, 14(6):492A, 1986.

183.A Anklesaria P, Klassen K, Sakakeeny MA, FitzGerald TJ, Greenberger JS. Biologic properties of permanent cloned cell lines from Sl/Sld genetically anemic mice. ISEH Meeting. Exp Hematol, 14(6):499A, 1986.

184.A Anklesaria P, Gurney C, DiMattio D, Rothstein L, Sakakeeny MA, FitzGerald TJ, Harigaya K, Greenberger JS. Differential expression of pSVX-neo following retrovirus vector transfer to stromal and hematopoietic stem cells in human continuous marrow culture. ISEH Meeting. Exp Hematol, 14(6):537A, 1986.

185.A Anklesaria P, Holland C, Klassen V, Sakakeeny MA, FitzGerald TJ, Greenberger JS. Expression of a selectable gene transferred by retroviral vector to hematopoietic stem cells and stromal cells in murine continuous bone marrow cultures. ISEH Meeting. Exp Hematol, (6):537A, 1986.

186.A FitzGerald TJ, Harigaya K, Rothstein L, Rybak ME, Holland C, Greenberger JS. Human bone marrow stromal cell lines demonstrate distinct radiobiologic differences *in vitro*. ISEH Meeting. Exp Hematol, 14(6):426A, 1986.

187.A Greenberger JS, FitzGerald TJ, Klassen V, Anklesaria P, Woda B. Low-dose-rate irradiation effects on the physiology of plateau phase bone marrow stromal cells *in vitro*: Alteration in the hematopoietic stem cell seeding and proliferation. ASTRO Meeting, Los Angeles, CA. Int J Rad Oncol Biol Phys, 12: Suppl. #1:172A, 1986.

188.A Holland CA, Anklesaria PN, Rothstein LE, Sakakeeny MA, Harigaya K, FitzGerald TJ, Newburger P, Greenberger JS. Differential cell lineage expression of a gene introduced by a retroviral vector in human and murine long-term marrow cultures. Rome, Italy, June 10-13, 1986. Int Symp Normal and Neoplastic Blood Cells: From Genes to Therapy, 3:21-22A, 1986.

189.A FitzGerald TJ, Harigaya K, Rothstein L, Holland CA, McKenna M, Kase K, Nizin P, Greenberger JS. Cloned human bone marrow stromal lines demonstrate varied radiobiologic properties with respect to exponential cell kill and radiation dose rate *in vitro*. ASTRO, Los Angeles, CA, 11/2 11/7/86. Clin Res, 84:881A, 1986.

190.A Anklesaria P, Holland CA, Sakakeeny MA, Klassen V, Rothstein L, FitzGerald TJ, Wollen M, Greenberger JS. Expression of retrovirus vector transferred G418 resistance in human hematopoietic and stromal cell primary cultures and permanent cell lines. AFCR Eastern, 10/10/86. Clinical Res, 34:873A, 1986.

191.A FitzGerald TJ, Harigaya K, Rothstein L, Holland CA, McKenna M, KaseKR, Nizin P, Greenberger JS. Cloned human bone marrow stromal lines demonstrate varied radiobiologic properties with respect to exponential cell kill and radiation dose rate *in vitro*. AFCR Eastern, 10/10/86. Clinical Res, 34:881A, 1986.

192.A Holland CA, Anklesaria P, Sakakeeny MA, Greenberger JS. Enhancer activated expression of the neor gene transferred by a new recombinant retroviral vector to hematopoietic cells *in vitro*. ASH Meeting, San Francisco, CA. Blood, 68(6) Suppl. #1: 258A, 1986.

193.A Ohta M, Anklesaria P, Farber N, FitzGerald TJ, Greenberger JS. Erythropoietin (EPO) enhances the proliferative response as well as erythroid differentiation of multipotential hematopoietic progenitor cellsin recombinant IL-3. ASH Meeting, San Francisco, CA, December 6-9, 1986. Blood, 68(5): Suppl. #1:174A, 1986.

194.A Anklesaria P, Kase K, Nizen P, Klassen V, Lee D, Holland C, FitzGerald TJ, Lee G, Greenberger JS. Hematopoietic stem cell supportive cloned marrow stromal cell line G-B1/6 engrafts *in vivo* and stimulates hematopoietic recovery from total body irradiation (TBI). ASH Meeting, San Francisco, CA. Blood, 68(5): Suppl. #1: 279A, 1986.

195.A Anklesaria P, Kase K, Nizin P, Klassen V, Le D, Holland C, FitzGerald TJ, Lee C-y, Greenberger JS. Permanent cloned marrow stromal cell line G-B1/6 engrafts *in vivo* and stimulates hematopoietic recovery from total body irradiation (TBI). Atlanta, GA, Radiation Research, 2/21-26, p. 76, D1-4, 1987. Radiation Res., 10:76A, 1987.

196.A FitzGerald TJ, Harigaya K, Rothstein L, Holland C, McKenna M, Kase K, Nizin P, Greenberger JS. Cloned human bone marrow stromal lines demonstrate varied radiobiologic properties with respect to x-ray survival *in vitro*. Atlanta, GA, Radiation Research, 2/21-26, p. 76, D1-5, 1987. Radiation Res., 10:76A, 1987.

197.A Greenberger JS, Anklesaria P, Ohta M, FitzGerald TJ, Klassen V, Sakakeeny MA. Marrow stromal cell regulation of clonal hematopoietic stem cell self-renewal and commitment. ICN-UCLA Symposium, Keystone, Colorado, In: Recent Advances In Leukemia And Lymphoma. Vol. 31, pp. 21, R.P. Gale and D.W. Golde, organizers, Jan. 25-31, 1987.

198.A Ohta M, Massague J, Anklesaria P, Sakakeeny MA, Greenberger JS. Transforming growth factor (TGF-ß) inhibits differentiation of IL-3 dependent multipotential hematopoietic progenitor cell line B6SUtA. Proc of AACR, 28:64A, 1987.

199.A Ohta M, Anklesaria P, Farber N, Sakakeeny MA, Greenberger JS. Recombinant erythropoietin stimulates proliferation and hemoglobinization of factor-dependent hematopoietic progenitor cell line B6SUtA. Proc.A.A.C.R., 31:12-13A, 1987.

200.A Anklesaria P, Kase KR, Holland CA, Ohta M, Sakakeeny MA, FitzGerald TJ, Greenberger JS. *In vivo* engraftment and function of permanent bone marrow stromal cell line GB1/6. AFCR National, San Diego, CA. Clinical Res, 35(3):419A, 1987.

201.A Enver T, Nakamoto B, Ohta M, Greenberger J, Papayannopoulou T. Adult murine haematopoietic progenitor cells express embryonic globin chains. AFCR National, San Diego, CA. Clinical Res, 35(3):425A, 1987.

202.A Pierce JH, Falco J, Aaronson SA, Greenberger JS. Neoplastic transformation of an Interleukin-3 dependent hematopoietic cell line correlates with the abrogation of factor dependence. ICN/UCLA Symposia, Keystone, CO. Proc. A.A.C.R., 31:12-13A, 1987.

203.A Greenberger JS, Anklesaria P, Glowacki J, Lee C-Y, FitzGerald TJ, Kase K, Sakakeeny MA. Demonstration of an *in vivo* transplantability and physiologic function of clonal permanent murine bone marrow stromal cell lines. ISEH Meeting, Tokyo, Japan, August 1987. Exp Hematol, 15(5):611A, 1987.

204.A Holland CA, Anklesaria PN, Sakakeeny MA, Greenberger JS. Enhancer sequences of a retroviral vector augment gene transfer to multipotenthematopoietic progenitors. ISEH Meeting, Tokyo, Japan, August 1987. Exp Hematol, 15(5):501A, 1987.

205.A Lee PH, Holland C, Greenberger JS, Menon M. Infectivity and expression of viral mediated transfer of specific genes into prostatic cancer and benign prostatic hyperplastic cells. Am Urol Assn., Anaheim, CA, 1987.

206.A Greenberger JS, Leif J, Wright J, Holland CA, Kase KR, Nizin P, Sakakeeny MA. Isolation of a transforming growth factor released from plateau phase x-irradiated bone marrow stromal cell lines that arrests IL-3/GM-CSF/G-CSF dependent hematopoietic progenitor cell lines in G0 then transplant them into factor independent leukemia cell lines. ASTRO Meeting, Boston, MA. Int J Rad Oncol Biol & Phys, 13; (Suppl. #1):156A, 1987.

207.A Anklesaria P, Sakakeeny MA, Greenberger JS, Holland CA. Enhancer sequences of a retroviral vector augment gene transfer to multipotent hematopoietic progenitors. Cold Spring Harbor Meetings, 37:63A, 1987.

208.A FitzGerald TJ, Zipori D, Harigaya K, McKenna M, Kase K, Nizin P, Tomer A, Sakakeeny MA, Holland C, Greenberger JS. Differences in x-raysurvival between cloned murine and human bone marrow stromal cells. Boston, MA, Proc. A.S.T.R.O., 32:73-74A, 1987.

209.A Greenberger JS, Leif J, Sakakeeny MA, Anklesaria P, Ohta M, FitzGerald TJ. Production of a multilineage hematopoietic growth factor by x-irradiated cloned murine bone marrow stromal cells *in vitro*. AFCR Eastern, 10/9-10/87. Clinical Res, 35(5):800A, 1987.

210.A FitzGerald TJ, Santucci S, Harigaya K, Holland C, Anklesaria P, McKenna M, Kase K, Nizin P, Greenberger JS. Cloned human bone marrow stromal cell lines demonstrate varied x-irradiation survival *in vitro*. AFCR Eastern, December 1987. Clinical Res, 35(5):806A, 1987.

211.A Anklesaria P, Williams DE, Broxmeyer HE, Greenberger JS, Holland CA. Expression of retroviral vectors with different enhancers in multipotential hematopoietic progenitors (CFU-S) *in vivo*. ASH Meeting. Blood, 70(5); Suppl. #1:153A, 1987.

212.A Ohta M, Greenberger JS. Src-recombinant murine retroviruses expand the pool size of hematopoietic progenitor cells but transform the stroma in continuous bone marrow culture. Blood, 70(5): Suppl. #1: 160A, 1987.

213.A Anklesaria P, Glowacki J, Kase K, FitzGerald TJ, Greenberger JS. Stimulation of hematopoietic recovery in Sl/Sld mice by transplantation of a clonal bone marrow stromal cell line. Blood, 70(5): Suppl. #1: 302A, 1987.

214.A Liggett WH, Anklesaria P, Dunlap JF, Greenberger JS, Glowacki J. GM-CSF promotes osteoclast features in nonadherent cells from marrow culture. Proc. I.A.D.R.-A.A.D.R., 37:18A, 1988.

215.A FitzGerald TJ, Santucci MA, Pierce J, Holland C, Kase K, Sakakeeny MA, Greenberger JS. Effect of retroviral vector transferred and expressed recombinant genes on radiosensitivity of multi-CSF (IL-3-dependent) hematopoietic progenitor cell lines *in vitro*. Radiation Research Meeting, 4/13-18/88, Philadelphia, PA. Radiation Res., 8:37A, 1988.

216.A Santucci MA, FitzGerald TJ, Pierce J, Kase K, Sakakeeny MA, Greenberger JS. Effects of IL 3, GM-CSF, or epidermal growth factor (EGF), on radiosensitivity of clonal IL-3, or IL-3/GM-CSF dependent hematopoieticprogenitor cell lines. AACR Meeting, New Orleans, LA, May 23-28, 1988. Proc. A.A.C.R., 6:42-43A, 1988.

217.A FitzGerald TJ, Santucci MA, Kase K, Pierce J, Greenberger JS. Granulocyte-macrophage colony stimulating factor (GM-CSF) increases low-dose-rate radioresistance of GM-CSF/IL-3 dependent hematopoietic progenitor cells *in vitro*. Proc. A.F.C.R. National, 10:3A, 1987.

218.A Greenberger JS, Anklesaria P, Ohta M, Sakakeeny MA, FitzGerald TJ, Kase K, Holland C, Wright E. Hematopoietic stem cell and stromal cell interactions during leukemogenesis. Int Soc Hematol, 22nd Congress, Milan, Italy, 12/1/88. Exp. Hematol., 31;(Suppl. #1):32A, 1988.

219.A FitzGerald TJ, Santucci MA, Henault S, Wright E, Anklesaria P, Pierce JH, Kase K, Greenberger JS. Transfected oncogenes v-src, and erb-b selectively decrease low-dose-rate radiosensitivity of hematopoieticprogenitor cells. ASTRO Annual Meeting, New Orleans, LA. Int J Rad Oncol Biol & Phys, 15: Suppl #1:174A, 1988.

220.A FitzGerald TJ, Santucci MA, Henault S, Wright E, Anklesaria P, Pierce J, Kase K, Greenberger JS. Low-dose-rate radiosensitivity of IL-3/GM-CSF dependent hematopoietic progenitor cells is altered by transfected oncogenes v-src or erb-b. Houston, Texas. Int Soc Exp Hematol, 16(5): 523A, 1988.

221.A Anklesaria P, Glowacki J, Campbell A, Bentley S, FitzGerald TJ, Kase K, Greenberger JS. Biologic characterization of a clonal bone marrow stromal cell line that stimulates hematopoietic recovery in Sl/Sld mice. Houston, Texas. Exp Hematol, 16(6): 523A, 1988.

222.A Santucci MA, Harigaya K, FitzGerald TJ, Woda B, Holland CA, Greenberger JS. Influence of cocultivation on radiosensitivity of human bone marrow stromal cell lines. Milan, Italy, September 1988. Int Soc Hematol, p.151. op-tu-1-2.

223.A Anklesaria P, Pierce JH, FitzGerald TJ, Greenberger JS. Expression of TGF-α gene in a clonal bone marrow stromal cell line augments "homing" and proliferation of a hematopoietic progenitor cell line expressing the epidermal growth factor receptor. AFCR Eastern, 10/88. Clin Res, 36(5):795A, 1988.

224.A FitzGerald TJ, Henault S, Sakakeeny MA, Santucci MA, Pierce J, Greenberger JS. Resistance of hemopoietic stem cells to x-irradiation at clinical low-dose-rate is induced by several classes of oncogenes. Blood, 72(5): Suppl. #1:177A, 1988.

225.A Anklesaria P, Pierce J, FitzGerald TJ, Kase K, Greenberger JS. "Homing" and proliferation of hematopoietic progenitor cells transfected with the EGF receptor on a clonal bone marrow stromal cell line producing TGF-α. Blood, 72(5):Suppl. #1: 378, 1988.

226.A FitzGerald TJ, Anklesaria P, Santucci MA, Henault S, Kase K, DeGaspe B, Pierce JH, Greenberger JS. Transfected and stably expressed oncogenes of several categories differentially alter low dose-rate x-irradiation repair of hematopoietic and stromal cells. New Orleans, LA (5/14/88-5/18/88). Proc. A.S.M., 52:19A, 1988.

227.A FitzGerald TJ, Henault S, Sakakeeny MA, Santucci MA, Pierce J, Anklesaria P, Greenberger J. Gamma irradiation resistance at low-dose-rate is induced in hematopoietic stem cells by oncogenes *v-erb-b, v-abl, and v-src*, and a novel oncogene stimulating factor independence. San Francisco, CA, Proc. A.A.C.R., 100:8A, 1989.

228.A FitzGerald TJ, Pierce JH, Anklesaria P, Wright E, Henault S, Greenberger JS. Gamma irradiation resistance at low-dose-rate is a biological marker for several classes of oncogenes. AFCR National, Washington, DC, 4/29/89-5/1/89. Proc. AACR, Vol. 30:431 (#1713), 1989.

229.A Anklesaria P, Greenberger JS, FitzGerald TJ, Wicha M, Campbell A. Haemonectin augments adhesion and proliferation of engrafted murine hematopoietic progenitors to a hematopoiesis-suppressive clonal bone marrow stromal cell line. AACR Meeting, San Francisco. Proc. AACR, Vol. 30:110 (#436), 1989.

230.A Anklesaria P, Glowacki J, Pierce J, Kase K, Ohara A, FitzGerald TJ, Bentley S, Greenberger JS. Therapy of hematopoietic disorders by clonal bone marrow stromal cell line transplant. ISEH Meeting, Paris, France. Exp Hematol, 17(6):661A, 1989.

231.A FitzGerald TJ, Valinski H, Wright E, Henault S, Kase K, Pierce JH, Greenberger JS. Low dose-rate radioresistance of clonal hematopoietic cell lines is linked to the transformed phenotype. Int J Rad Oncol Biol & Phys, 17: Suppl #1:149A, 1989.

232.A Campbell AD, Wicha MS, FitzGerald TJ, Greenberger JS, Anklesaria P. The hematopoietic defect of Sl/Sld mice may result from reduced hemonectin expression by stromal cells. ISEH Meeting, Paris, France. Exp Hematol, 17(6):517A, 1989.

233.A Bentley SA, Kirby SL, Anklesaria P, Greenberger JS. Proteoglycan synthesis by bone marrow stromal cell lines from congenitally anemic mice. Exp Hematol, 17(6):529A, 1989.

234.A Ohara A, Anklesaria P, FitzGerald TJ, Shultz L, Greenberger JS. Inhibition of hematopoiesis by stromal cell lines established from marrow cultures derived from viable mev/mev mutant mice. ASH Meeting, Atlanta, GA. Blood, 74(7), Suppl.#1:71A, 1989.

235.A Anklesaria P, Pierce J, FitzGerald TJ, Campbell A, Massague J, Greenberger JS. Role of membrane growth factors and extracellular matrix proteins in regulating hematopoiesis. ASH Meeting, Atlanta, GA. Blood, 74(7), Suppl. #1: 227A, 1989.

236.A FitzGerald TJ, Henault S, Anklesaria P, Kase K, Das I, Pierce JH, Greenberger JS. Gamma irradiation resistance of a clonal hematopoietic progenitor cell line is induced by the *v-abl* oncogene as demonstrated by both split-dose and single-fraction experiments at 5 cGy/min clinical low-dose-rate. ASTRO Proceedings. Int. J. Rad. Oncol. Biol. & Phys., 70: Suppl. #1:82A, 1990.

237.A Bleiberg I, Glowacki J, Anklesaria P, Greenberger JS. Development of an osteoclastic environment in implants of bone particles in mice. ISEH Meeting, Seattle, WA. Exp Hematol, 18:Suppl. #6:563A, 1990.

238.A Anklesaria P, Ohara A, FitzGerald TJ, Greenberger JS. Differential effect of Sl/Sld stromal cells on adhesion and proliferation of factor dependent mast or myeloid cells. ISEH Meeting, Seattle, WA, 8/26/90 - 8/30/90. Exp Hematol, 18:Suppl #6:565A, 1990.

239.A Liggett W, Lian JB, Anklesaria P, Greenberger JS, Glowacki J. Effects of osteocalcin on proliferation and differentiation of putative osteoclast progenitors from murine long-term bone marrow cultures. Atlanta, GA (8/28/90), Proc. Am. Soc. Bone & Min. Res., 7:3A, 1990.

240.A Crawford DR, Greenberger JS. Transformation-modulated proteins in mouse myeloid cell line 32D. AFCR Eastern, 10/90. Clin Research, 38(3):775A, 1990.

241.A Bleiberg I, Glowacki J, Anklesaria P, Greenberger JS. Delayed osteoclast activitythe site of bone particle implants in complete radiation chimeras reconstituted with mi/mi osteopetrotic spleen hematopoietic cells. ASH Meeting, Boston, MA., 12/90. Blood, 38(3):85A, 1990.

242.A Anklesaria P, Brody R, Brettler D, Ricca G, Levine P, Greenberger JS. Expression of biologically active human recombinant factor VIII-C by a transplantable clonal bone marrow stromal cell line: an alternate model for somatic gene therapy. ASH Meeting, Boston, MA., 12/90. Blood, 76(10); Suppl. #1:526A, 1990.

243.A Crawford DR, Greenberger JS. Transformation of mouse promyelocytes and associated proteins. ASH Meeting, Boston, MA., 12/90. Blood, 76(10):Suppl. #1:229A, 1990.

244.A Sullenbarger B, Anklesaria P, Greenberger JS, Wicha M, Campbell A. Mammalian sera contain a protein immunologically and functionally related to hemonectin. ASH Meeting, 12/90, Boston, MA. Blood, 76(10):Suppl. #1: 122A, 1990.

245.A Greenberger JS, Leif J, Anklesaria P, Sakakeeny MA, English D, Crawford D, FitzGerald TJ. Malignant transformation of IL-3 dependent hematopoietic progenitor cell lines cocultivated with gamma irradiated clonal marrow stromal cell lines. A Workshop On Neoplastic Transformation In Human Cell

Systems *In vitro*: Mechanisms Of Carcinogenesis. Georgetown University Medical Center, Washington, D.C - 4/25/91 - 4/26/91, pp. 72-73, 1991.

246.A Greenberger JS, Anklesaria P, Leif J, English D, Sakakeeny MA, FitzGerald TJ. Gamma irradiation of clonal bone marrow stromal cell lines induces factor independent hematopoietic tumor cells by cocultivation. ISEH Meeting, Parma, Italy. Exp Hematol, 19(6):477A, 1991.

247.A Greenberger JS, Pratt D, Buckley C, Sullenbarger B, Wicha M, Campbell A, Williams D. Mast cell growth factor induces a marrow specific adhesion protein hemonectin in stromal cell lines from Sl/Sld mice. ISEH Meeting, Parma, Italy. Exp. Hematol., 19(6):471A, 1991.

248.A Teixido J, Hemmler M, Greenberger JS, Anklesaria P. Adhesion of human hematopoietic progenitors to marrow stromal cells *in vitro* involves VLA-4 and V-CAM-1. ISEH Meeting, Parma, Italy. Exp Hematol, 19(6):476A, 1991.

249.A Greenberger JS, Anklesaria P, Leif J, Sakakeeny MA, English D, Kase K, Das I, Buckley C, FitzGerald TJ. Indirect gamma irradiation leukemogenesis through bone marrow stromal cells. Proc. A.S.T.R.O., 1991. Int. J. Rad. Oncol. Biol. & Phys., 73; (Suppl. #6):, 1991.

250.A Greenberger JS, Glowacki J, Bleiberg I. Osteoclastogenesis in subcutaneous implants of bone matrix in normal, mutant, and chimeric mice. Proc. Am. Soc. Bone & Min. Res., 8:17A, 1991.

251.A Greenberger JS. Humoral and cell surface interactions during gamma irradiation leukemogenesis *in vitro*. Symposium On Stromal Cell Regulation Of Hematopoiesis. Bethesda, MD, 6/21-22/91. Proc. Symposia General Medicine, 18:7A, 1991.

252.A Greenberger JS, Anklesaria P, Leif J, Sakakeeny MA, FitzGerald TJ, Shadduck RK, Pierce JH. Factor-independent tumorigenic subclone of a hematopoietic cell line induced by cocultivation with gamm irradiated bone marrow stromal cells displays an M-CSF autocrine phenotype. ASH Meeting., Denver, CO. Blood, 78(10)::Suppl. #1:29A, 1991.

253.A Santucci MA, FitzGerald TJ, Anklesaria P, Pratt D, Buckley C, Das I, Kase K, Greenberger JS, Holland C. The tax-gene of HTLV-1 increases radiosensitivity of a stromal cell line *in vitro*. ASH Meeting, Denver, CO. Blood, 78(10): Suppl. #1:399A, 1991.

254.A Teixido J, Hemmler M, Greenberger JS, Anklesaria P. Human CD34+ progenitor cell adhesion to marrow stroma is mediated by VLA-4/VCAM and VLA-5/fibronectin. ASH Meeting, Denver, CO. Blood, 78(10):Suppl. #1:302A, 1991.

255.A Sakakeeny MA, Romanik E, Anklesaria P, Leif J, FitzGerald TJ, Greenberger JS. A clonal bone marrow stromal cell line produces an M-CSF of intermediate size. ISEH Meeting, Providence, RI. Exp Hematol, 20(6):814A, 1992.

256.A Romanik EA, Sakakeeny MA, Leif J, FitzGerald TJ, Greenberger JS. Mutational analysis of the CSF-1 receptor (*c-fms*) in factor-independent hematopoietic cell lines. ISEH Meeting, Providence, RI. Exp Hematol, 20(6):764A, 1992.

257.A Santucci MA, Laneuville P, Anklesaria P, Das I, Greenberger JS. Radiosensitivity of p210 bcr/abl expressing hematopoietic cell lines. ISEH Meeting, Providence, RI. Exp Hematol, 20(6):780A, 1992.

258.A Shevde N, Greenberger JS, Quinto C, Bleiberg I, Glowacki J. Evidence for direct or stromal cell-mediated stimulation of osteoclastogenesis. ISEH Meeting, Providence, RI. Exp Hematol, 20(6):810A, 1992.

259.A Greenberger JS, Anklesaria P, Hurwitz DR, Nathan M, Sarver S, Ricca G, Catalfamo J, Brody R, Brettler D, Levine P, Merrill W, Leif J, Pratt D, Buckley C. Expression of human factor VIII:C in bone marrow stromal cells. Proceedings of Workshop On Gene Therapy For Hemophilia Meeting, Bethesda, MD 3/18/92 - 3/19/92. Proc. N.H.L.B.I./NIH, 8:72-73, 1992.

260.A Greenberger JS, Anklesaria P, Catalfamo J, Brody B, Merrill W, Leif J, Emami S, Brooks M, Nathan N, Hurwitz DR, Ricca G, Sarver N, Brettler D, Levine P. Gene therapy for hemophilia using bone marrow stromal cell transplantation. XX International Congress of the World Federation Of Hemophilia, Athens, Greece, 10/12/92 - 10/17/92, Vol. 17:82-83, 1992.

261.A Shevde N, Anklesaria P, Greenberger JS, Glowacki J. Mechanisms of regulation of osteoclastogenesis in defined murine marrow cultures. Proc. Soc. Bone & Min. Res., 21:17-18A, 1992.

262.A Greenberger JS, Anklesaria P, Romanik E, Sakakeeny MA, Leif J, FitzGerald TJ. Role of hematopoietic stroma in leukemogenesis. Bethesda, MD., 11/23/92 - 11/24/92, Proc. N.H.L.B.I. Symposium on Fanconi's Anemia, 1:17-18, 1992.

263.A Anklesaria P, Greenberger J, Pratt D, Buckley C, FitzGerald TJ, Sullenbarger B, Campbell A, Williams D, Wicha A. Steel factor induces a marrow specific adhesion protein hemonectin in stromal cell lines from Sld/Sld mice. Exp Hematol, 20(6):807A, 1992.

264.A Anklesaria P, Leif J, Greenberger JS, FitzGerald TJ, Santucci MA. Expression of integrins and selectins on progenitor cells from chronic myeloid leukemia patients. Exp Hematol, 20(6):783A, 1992.

265.A Anklesaria P, Salimi A, Greenberger JS, Griffin TW. Carcinoembryonic antigen (CEA) mediates adhesion of colorectal cancer cells to human bone marrow stroma and endothelial cells. Denver, CO. The Am. Soc. Cell Biol., 7:18A, 1992.

266.A Romanik EA, Sakakeeny MA, Leif J, FitzGerald TJ, Greenberger JS. Analysis of the *c-fms* protooncogene in factor-independent hematopoietic progenitor cell lines. Denver, CO. The Am. Soc. Cell Biol., 17:11A, 1992.

267.A Greenberger JS. The role of colony-stimulating factors and cytokines on radiation repair of hematopoietic stem cells. Proceedings Federal Research Council Committee on Effects of Ionizing Radiation, "The effects of cytokines on radiation response," Royal Institute of British Architects, London, England, 11/4/92, 86:101A, 1992.

268.A Santucci MA, Das I, Anklesaria P, FitzGerald TJ, Greenberger JS. Differential effect of mammalian cellular and viral oncogenes on radioresistance of hematopoietic progenitor cells at clinical low-dose-rate. ASH Meeting, Anaheim, CA, 12/4/92 - 12/8/92. Blood, 80(10):Suppl.#1:297A, 1992.

269.A Bleiberg I, Greenberger JS, Glowacki J. Osteoclastogenesis in subcutaneous implants of bone matrix in normal mutant and chimeric mice. Cell Growth and Differentiation IV. London, England, Cell Growth and Differentiation, 18:290A, 1992.

270.A Romanik EA, Leif J, Greenberger JS. Characterization of several sequences from a factor independent FDC-P1 hematopoietic progenitor cell line isolated by subtractive hybridization. Proc UCLA Symposium. Cytokine hematopoiesis and cytokine receptors: from cloning to the clinic. Keystone, CO, 1/31/93 - 2/17/93. ICN-UCLA Symposia, 82:73-74A, 1993.

271.A Glowacki J, Shevde N, Greenberger JS. Distinct roles of interleukins-1, and -11 in osteoclastic differentiation of hematopoietic progenitors. ASBMR Meeting. J Bone & Min Res, 8:Suppl. #1:5164A, 1993.

272.A Santucci MA, Ramponi GP, Ruggiero M, Pacini S, Miniaci G, Barbieri E, Pierce JH, Greenberger JS. Overexpression of a synthetic phosphotyrosine protein phosphatase gene increases radiosensitivity *in vitro* of normal and transformed fibroblasts. ASH Meeting, St. Louis, MO, 12/3/93 12/7/93. Blood, 82(10):Suppl. #1:533A, 1993.

273.A Santucci MA, Pierce JH, Frezza G, Babini L, Greenberger JS. Erythropoietin acts as a radioprotector on pure hematopoietic progenitor cells expressing the cognate receptor. ASH Meeting, St. Louis, MO, 12/3/93-12/7/93. Blood, 82(10):Suppl. #1:226A, 1993.

274.A Glowacki J, Shevde N, Greenberger JS. Roles of interleukins-6 and -11 in mediating interleukin-1 or parathyroid hormone stimulation of osteoclastogenesis. ASH Meeting, St. Louis, MO, 12/3/93-12/7/93. Blood, 82(10):Suppl. #1: 498A, 1993.

275.A Epperly MW, Reed JC, Santucci MA, Anderson J, Greenberger JS. Effect of the BCL-2 gene expression on radiation sensitivity *in vitro* of the murine hematopoietic progenitor cell line 32D cl 3. Presented at the Forty-Second Annual Meeting of the Radiation Research Society, Nashville, TN 4/29/94 - 5/4/94. Radiation Research Society, pp. 234: 510A, 1994.

276.A Rosenstein M, Prezioso JA, Hughey RP, Greenberger JS. Role of gamma glutamyl transpeptidase (GGTP) in radioprotection. ASTRO Meeting, San Francisco, CA, October 2-6, 1994.

277.A Epperly M, Hallahan DE, Kufe DW, Weichselbaum R, Greenberger JS. Manganese superoxide dismutase transgene increases the radioresistance of hematopoietic progenitor cell lines. ISEH Meeting, Minneapolis, MN, August 21-25, 1994. Exp Hematol, 22(8):790, 1994.

278.A Epperly M, Ando K, Greenberger JS. Expression of transgenes for cyclin D2 or D3 results in an increased radioresistance in 32D cl 3 cells. ISEH Meeting, Minneapolis, MN, August 21-25, 1994. Exp Hematol, 22(8):699, 1994.

279.A Epperly MW, Hallahan DE, Kufe WF, Weichelbaum R, Greenberger JS. The superoxide dismutase transgene protects hematopoietic progenitor cells from ionizing irradiation. ASTRO Meeting, San Francisco, CA, October 2-6, 1994.

280.A Pogue-Geile K, Sakakeeny MA, Greenberger JS. The effect of ionizing irradiation on multiple M-CSF RNA transcripts. ISEH Meeting, Minneapolis, MN, August 21-25, 1994. Exp Hematol, 22(8):769, 1994.

281.A Goltry KL, Pogue-Geile KL, Greenberger JS. Identification of genes expressed in a factor-independent clonal subline derived from the hematopoietic progenitor cell line FDC-P1. ISEH Meeting, Minneapolis, MN, August 21-25, 1994. Exp Hematol, 22(8):749, 1994.

282.A Jahroudi N, Greenberger JS. The mechanism of ionizing irradiation induction of von Willebrand factor. ISEH Meeting, Minneapolis, MN, August 21-25, 1994. Exp Hematol, 22(8):752, 1994.

283.A Greenberger JS, Kalend AM, Rosenstein M, Deutsch M, Chen ZP, Epperly M, Lim M. Correlation of pulmonary function tests with irradiated lung Voxel-rendered volumes in Stage (II, III) lung cancers treated by 3D conformal radiotherapy. ASTRO Meeting, San Francisco, CA, October 2-6, 1994.

284.A Kalend AM, Greenberger JS, Rosenstein M, Chen ZP, Deutsch M, Flickinger J, Epperly M, Izadbakhsh M, Yum G. Therapeutic advantage of a planar conformation of megavoltage x-ray beams for lung cancer radiotherapy. ASTRO Meeting, San Francisco, CA, October 2-6, 1994.

285.A Pogue-Geile KL, Goltry KL, Greenberger JS. Differential gene expression in a factor independent clonal subline derived from the hematopoietic progenitor cell line FDCP-1. Gene Induction Meeting, Montreal, Canada, 1994.

286.A Seed TM, Goltry K, Greenberger JS. Leukemic cell transformation under chronic radiation *in vitro*. ISEH Meeting, Minnapolis, MN, 8/21/94 - 8/29/94. Exp Hematol, 22(8):762, 1994.

287.A Azar H, Shevde N, Reichel H, Greenberger JS, Glowacki J. Regulation of murine osteoclast progenitors: the roles of IL-6 and IL-6 receptors. ASBMR Meeting, 1994. J Bone& Mineral Res, 9(Suppl: 1); 245, 1994.

288.A Kalend AM, Chen ZP, Quader MA, Lim M, Izadbakhsh M, Greenberger JS. Dose optimization of 3-D multileaf collimation (MLC) conformation by minimization of integral dose. AAPM Annual Meeting, 4/94.

289.A Seed TM, Goltry K, Greenberger JS. Chronic radiation leukemogenesis *in vitro*. Presented at the 42$^{nd}$ Annual Meeting of the Radiation Research Society, Nashville, TN 4/29/94 - 5/4/94.

290.A Shriver SP, Bloch LM, Greenberger JS. Identification and characterization of genes differentially expressed in lung and head and neck cancers. Am. Soc. Human Genetics, Montreal, Canada (10/10/94).

291.A Santucci MA, Greenberger JS, Pierce J. Expression of acute lymphoblastic leukemia-associated p185 bcr/abl oncoprotein abrogates growth factor-dependence and increases resistance to radiation-induced DNA damage in a murine myeloid cell line. ASH 36$^{th}$ Annual Meeting, Nashville, TN, December 2-6, 1994. Blood, 84(10):Suppl. #1; 140A, 1994.

292.A Jahroudi N, Greenberger JS. Increased endothelial cell von Willebrand factor expression in response to ionizing irradiation. Thirty-Sixth Annual Meeting of the American Society of Hematology, Nashville, TN, 12/1/94 - 12/6/94. Blood, 84(10):Suppl. #1;76A, 1994.

293.A Jahroudi N, Greenberger JS. Localization of a negative regulatory element in the endothelial specific promoter of the von Willebrand factor gene. Thirty-Sixth Annual Meeting of the American Society of Hematology, Nashville, TN, 12/1/94 - 12/6/94. Blood, 84(10):Suppl. #1;191A, 1994.

294.A Pogue-Geile KL, Goltry KL, Greenberger JS. Differential gene expression in a factor independent clonal subline derived from the hematopoietic progenitor cell line FDC-P1. Thirty-Sixth Annual Meeting of the American Society of Hematology, Nashville, TN, 12/1/94 - 12/6/94. Blood, 84(10):Suppl. #1;416A, 1994.

295.A Epperly MW, Berry LA, Halloran A, Greenberger JS. Overexpression of the cyclin D1, D2 or D3 alters radiation sensitivity of the murine hematopoietic progenitor cell line 32D cl 3. Thirty-Sixth Annual Meeting of the American Society of Hematology, Nashville, TN, 12/1/94 - 12/6/94. Blood, 84(10):Suppl. #1;39A, 1994.

296.A Goff JP, Shields DS, Michalopoulos GK, Greenberger JS. Synergistic effects of hepatocyte growth factor on *in vitro* generation of CFU-GM from human cord blood CD34+ progenitor cells. Thirty-Sixth Annual Meeting of the American Society of Hematology, Nashville, TN, 12/1/94 - 12/6/94. Blood, 84(10):Suppl. #1:280A, 1994.

297.A Michaels MM, Kaufman C, Huneke R, Pham SI, Colson Y, Yang T, Capper J, Greenberger JS, Blodgett K, Ildstad ST. A nonlethal approach for mixed allogeneic hematolymphopoietic chimerism in primates without graft-versus-host disease (GVHD). Thirty-Sixth Annual Meeting of the American Society of Hematology, Nashville, TN, 12/1/94 - 12/6/94. Blood, 84(10):Suppl. #1;98A, 1994.

298.A Epperly MW, Berry L, Halloran A, Reed JC, Greenberger JS. Inhibition of radiation-induced G1 arrest by overexpression of either the D-type cyclins, cdk-4 or bcl-2 in the IL-3-dependent 32D cl 3 hematopoietic progenitor cell lines. Proc. of the 43rd Annual Meeting of the Radiation Research Society, San Jose, CA, 4/1/95-4/6/95; 206:26-407, 1995.

299.A Goltry KL, Greenberger JS. Use of differential display to identify genes with altered expression in an irradiated stromal cell line. Proc. of the 43rd Annual Meeting of the Radiation Research Society, San Jose, CA, 4/1/95-4/6/95; 173:19-275, 1995.

300.A Bayouth JE, Kalend AM, Muthuswamy M, Izadbakhsh MM, Greenberger JS. Collision avoidance algorithm for the Varian 2100 C/D. AAPM, 1995.

301.A King G, Karasek K, Faul C, Znati C, Kalend A, Meneskie P, Greenberger JS. Physical measurements of interstitial fluid pressure in patients undergoing radiation therapy for carcinoma of the cervix. AAPM, 1995.

302.A Karasek K, Faul C, Znati C, King G, Jain R, Greenberger JS. Correlation of clinical parameters with interstitial fluid pressure measurements in carcinoma of the cervix. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95.

303.A Epperly MW, Jahroudi N, Rosenstein M, Shields D, Engelhardt J, Huang L, Greenberger JS. Protection of the lung from ionizing irradiation damage by inhalation gene therapy. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95. Int. J Rad Oncol Biol Phys, 32(Suppl #1):173, 1995.

304.A Faul C, Karasek K, Sumpkin J, Kalend A, Greenberger JS. Transmission block technique for combined pelvic and inguinal node irradiation in carcinoma of the vulva and vagina. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95.

305.A Greenberger JS, Kalend A, Sciurba F, Landreneau R, James J, Belani C, Deutsch M. Dose/volume histogram-based treatment planning for conformal radiation therapy of lung cancer and its correlation to pulmonary function tests. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95.

306.A Blodgett K, Kalend A, Quader M, Deutsch M, Greenberger JS. Dynamic beam compensation of the breast 1D Vs 3D dose intensity modulation for missing tissues. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95.

307.A Kalend AM, Quader MA, Muthuswamy M, Flickinger J, Lim M, Greenberger JS. Dosimetry factors expressing the dosimetric advantage of multifield noncoplanar conformal radiotherapy. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95. Int. J Rad Oncol Biol Phys, 32(Suppl. #1):304, 1995.

308.A Bayouth JE, Muthuswamy M, Kalend AM, Izadbakhsh MM, Greenberger JS. Computer controlled conformal therapy - analytical and computer simulation of collision avoidance and treatment delivery. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95. Int. J Rad Oncol Biol Phys, 32(Suppl.#1):188, 1995.

309.A Chen ZP, Kalend AM, Leipner S, Lim M, King G, Greenberger JS. Clinical requirement in the treatment planning of dynamic wedges and their dissimilarities to static wedge filters in photon fields. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95.

310.A Quader MA, Kalend AM, Deutsch M, Greenberger JS. Shallow and deep breath lung tumor volume as estimated by spiral volumetric CT in comparison to standard axial CT using virtual simulation. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95. Int. J Rad Oncol Biol Phys, 32(Suppl. 1):299, 1995.

311.A Muthuswamy M, Bayouth JE, Kalend AM, Izadbakhsh M, Greenberger JS. Clinical application of an algorithm for beam setup determination and beam-couch intersection avoidance with visual treatment animation of a Varian 2100 C/D. Thirty-seventh Annual Scientific Meeting of the American Society for Therapeutic Radiology & Oncology, Miami Beach, FL, 10/8/95 - 10/11/95.

312.A Goltry KL, Pogue-Geile KL, Greenberger JS. Indirect irradiation leukemogenesis through bone marrow stromal cells: Use of differential display to identify genes with altered expression in irradiated stromal cells or

induced in FDCP-1 cells by cocultivation. International Society for Experimental Hematology Meeting, Dusseldorf, Germany, 8/25/95 - 9/1/95. Exp Hematol, 23(8):751, 1995.

313.A Greenberger JS, Epperly MW, Fisher AM, Cote GJ, Goldring SM, Glowacki J. Hematopoietic progenitor cells expressing the transgene for human calcitonin receptor bind in a "juxtacrine" pair with bone marrow stromal cells expressing the transgene for human calcitonin. International Society for Experimental Hematology Meeting, Dusseldorf, Germany, 8/25/95 - 9/1/95. Exp Hematol, 23(8):750, 1995.

314.A Jahroudi N, Ardekani A, Greenberger JS. The von Willebrand factor gene transcription is increased in response to ionizing irradiation. International Society for Experimental Hematology Meeting, Dusseldorf, Germany, 8/25/95 - 9/1/95. Exp Hematol, 23(8):779, 1995.

315.A Epperly MW, Greenberger JS. Inhibition of apoptosis by the overexpression of manganese superoxide dismutase (MnSOD) in 32D cl 3 hematopoietic progenitor cells. International Society for Experimental Hematology Meeting, Dusseldorf, Germany, 8/25/95 - 9/1/95. Exp Hematol, 23(8):820, 1995.

316.A Goff JP, Shields DS, Michalopoulos GK, Greenberger JS. Effects of hepatocyte growth factor and IL-11 on human cord blood CD34+ progenitor cells. International Society for Experimental Hematology Meeting, Dusseldorf, Germany, 8/25/95 - 9/1/95. Exp Hematol, 23(8):602, 1995.

317.A Wang J, Glowacki J, Mizuno S, Boggs S, Subbotin V, Greenberger JS. A three-dimensional *in vitro* model of marrow microenvironment. The 2nd International Symposium on Osteoporosis, Beijing, China, October 11-16, 1995.

318.A Greenberger JS, Pogue-Geile KL, Goltry KL, Epperly MW, Jahroudi N, Bray J. Role of the hematopoietic microenvironment in irradiation leukemogenesis. Keystone Symposium on the Hematopoietic Microenvironment, Taos, New Mexico, February 16-22, 1996.

319.A Goltry KL, Greenberger JS. Changes in adhesion of a hematopoietic cell line to an irradiated bone marrow stromal cell line. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:665A, 1995.

320.A Goltry KL, Lynde GC, Greenberger JS. Isolation of altered transcripts in an irradiated bone marrow stromal cell line using differential display. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:729A, 1995.

321.A Jahroudi N, Ardekani A, Greenberger JS. Ionizing irradiation increases transcription of the von Willebrand factor gene in endothelial cells. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:875A, 1995.

322.A Jahroudi N, Ardekani A, Greenberger JS. An NF-1-like protein functions as a repressor of the vWf promoter. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:80A, 1995.

323.A Pogue-Geile KL, Gott JG, Greenberger JS. Intracisternal A-type particle transcripts are overexpressed in the IL-3 independent hematopoietic cell line FI7CL2 and are induced by serum and by gamma irradiation. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:315A, 1995.

324.A Epperly MW, Berry LA, Bray JA, Greenberger JS. Overexpression of MnSOD in the 32D cl 3 hematopoietic progenitor cell line prevents apoptotic DNA strand breaks resulting from irradiation and IL-3 withdrawal. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:413A, 1995.

325.A Epperly MW, Fisher AM, Berry LA, Bray JA, Greenberger JS. Binding of the human calcitonin receptor located on 32D cl 3 murine hematopoietic cells to human calcitonin expressed on GPIα stromal cells results in enhanced cobblestone island formation. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:662A, 1995.

326.A Goff JP, Shields DS, Petersen B, Zajac V, Michalopoulos GK, Greenberger JS. C-met receptor is expressed on human cord blood CD34+Thy1+Lin- stem cells and is upregulated in CD34+ progenitor cells in response to IL-11. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:315A, 1995.

327.A Boggs SS, Bray J, Greenberger JS, Smithies O, Cook DN. Prolonged cell production in long-term bone marrow cultures from mice lacking macrophage inflammatory protein MIP-1α. American Society of Hematology Meeting, Seattle, WA, December 1-5, 1995. Blood, 86(10):Suppl.#1:129, 1995.

328.A Ardekani AM, Greenberger JS, Jahroudi N. DNA sequences located in the first exon of human von Willebrand factor gene regulate its endothelial cell-specific expression. AACR Meeting on The Molecular Basis of Gene Transcription, San Diego, CA, December 2-6, 1995.

329.A Zwacka R, Zhang Y, Epperly M, Greenberger JS, Engelhardt JF. Ectopic adenoviral-mediated expression of MnSOD and Cu/ZnSOD in radioprotective gene therapy. Gene Therapy of Acquired Diseases Meeting, Nashville, TN., October 19-21, 1995.

330.A Goff JP, Shields DS, Petersen B, Michalopoulos GK, Greenberger JS. The synergistic effects of hepatocyte growth factor on colony formation from human cord blood CD34+ progenitor cells are the result of c-met receptor expression. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

331.A Goltry KL, Lynde GC, Greenberger JS. Identification of radiation-induced changes in gene expression in a bone marrow stromal cell line using differential display. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

332.A Glowacki J, Azar H, Greenberger JS. The roles of receptors for CSF-1 and Interleukin-6 in murine osteoclastogenesis. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

333.A Jahroudi N, Ardekani A, Greenberger JS. Negative and positive cis-acting elements in the 5' flanking region and the first exon regulate endothelial specific expression of the vWf gene. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

334.A Epperly MA, Bray JA, Berry LA, Greenberger JS. Overexpression of MnSOD in the 32D cl 3 murine hematopoietic progenitor cell line enhances cobblestone island formation. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

335.A Boggs SS, Anderson J, Greenberger JS, Smithies O, Cook DN. Cell production by long-term bone marrow cultures from mice lacking macrophage inflammatory protein (MIP)-1a is prolonged. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

336.A Pogue-Geile KL, Gott J, Greenberger JS. Intracisternal A particle transcripts are overexpressed in the IL-3 independent hematopoietic cell ine FDC-P1JL26 FI7CL2 and are induced by serum and by gamma irradiation. Keystone Symposium "Hematopoietic Microenvironment", Taos, New Mexico, February 16-22, 1996.

337.A Goltry KL, Lynde GC, Greenberger JS. Radiation-induced changes in gene expression in a bone marrow stromal cell line. Proc. of the Radiat. Res. Soc. Annual Meeting, pp.07-127, 1996.

338.A Epperly MW, Zeevi A, Berry LA, Greenberger JS. Protection of the lung from irradiation-induced damage by inhalation of liposome-MnSOD plasmid complex. Proc. of the Radiat. Res. Soc. Annual Meeting, pp.07-118, 1996.

339.A Goff JP, Shields DS, Boggs SS, Greenberger JS. Effects of recombinant cytokines on colony formation by irradiated human cord blood CD34+ hematopoietic progenitor cells. Proc. of the Radiat. Res. Soc. Annual Meeting, pp.05-87, 1996.

340.A Jahroudi N, Ardekani A, Greenberger JS. Ionizing irradiation increases transcription of the von Willebrand factor gene in endothelial cells. Proc. of the Radiat. Res. Soc. Annual Meeting, pp.14-258, 1996.

341.A Belani CP, Aisner J, Hiponia D, Ramanathan R, Hadeed V, Jett J, Landreneau R, Greenberger JS. Paclitaxel and carboplatin with concurrent thoracic radiotherapy for regionally advanced non-small cell lung cancer (NSCLC). ASCO Proceedings, 1996.

342.A Flickinger JC, Kalend AM, Bahri S, Seidel M, Greenberger JS. Segmental irradiation with multileaf collimators (SIM): A technique that can reduce the esophageal dose from conformal lung cancer radiotherapy. ASTRO 38th Annual Meeting, Los Angeles, CA, October 28-31, 1996.

343.A Pogue-Geile, KL, Gott JG, Greenberger JS. Ionizing irradiation induction of intracisternal A-type particle transcripts in the IL-3 independent hematopoietic cell line FI7CL2 derived from FDC-P1JL26. Proc. of the Radiat. Res. Soc. Annual Meeting, pp.14-261, 1996.

344.A Bahri S, Flickinger JC, Kalend A, Deutsch M, Belani C, Jett J, Sciurba F, Brown E, Greenberger JS. Results of multifield conformal radiation therapy of non-small cell lung cancer using multileaf collimator beams. ASTRO 38th Annual Meeting, Los Angeles, CA, October 28-31, 1996. Int J Rad Oncol Biol Phys, 36(1):Suppl. 1:348, 1996.

345.A Guo X-YD, Henderson YC, Greenberger JS, Deisseroth AB. Altered tyrosine phosphorylation of JAK1 and STAT1 proteins in 32D cells overexpressing P210 bcr/abl oncoprotein. J Invest. Med., 44(3):234A, 1996.

346.A Guo X-YD, Henderson YC, Greenberger JS, Deisseroth AB. Altered tyrosine phosphorylation of JAK1 and STAT1 proteins in 32D cells overexpressing P210 bcr/abl oncoprotein. Proc. Amr. Ass. Cancer Res., 37:505, 1996.

347.A Jahroudi N, Ardekani A, Greenberger JS: Two repressor elements regulate endothelial-specific activation of the vWf promoter. ISEH 25th Annual Meeting, New York, NY, August 23-27, 1996. Exp. Hematol., 24(9):A745, 1996.

348.A Greenberger JS, Bray JA, Glowacki J, Epperly MW. *Op/op* bone marrow stromal cells expressing transgenes for cell surface M-CSF protein can support osteoclastogenesis. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:738, 1996.

349.A Epperly MW, Bray JA, Glowacki J, Boggs SS, Patrene K, Greenberger JS. Ovariectomy of C57BL/6J mice increases bone marrow cell capacity for osteoclast formation in cocultures of purified cell populations. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:3185, 1996.

350.A Goff JP, Shields DS, Greenberger JS. Hepatocyte growth factor and IL-11 increase the irradiation survival of human cord blood CD34+ hematopoietic progenitor cells. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:3131, 1996.

351.A Jahroudi N, Ardekani A, Greenberger JS. Two repressor elements regulate endothelial-specific activation of the vWf promoter. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:2028, 1996.

352.A Glowacki J, Greenberger JS, Rajavashisth TB: Extramedullary hematopoiesis in calcified aortas of ApoE knockout mice. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:2031, 1996.

353.A Mizuno S, Wang J, Greenberger JS, Glowacki J. Perfusion enhances functions of bone marrow stromal cells in 3D culture. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:743, 1996.

354.A Pogue-Geile KL, Gott JG, Greenberger JS. Insertion of intracisternal A particle DNA into the IL 3 gene correlates with the expression of IL-3 but insertion of IAP into the GM-CSF gene does not always correlate with the expression of GM-CSF. The 38th Annual Meeting of ASH, Orlando, FL, December 6 10, 1996. Blood, 88(10):Supp#1:3241, 1996.

355.A Epperly MW, Bray JA, Greenberger JS, Corey S. Lyn and Syk differentially regulate apoptosis in irradiated B lymphocytes and contribute to G-CSF anti-apoptotic effects in B lymphocytes that ectopically express G-CSFR. The 38th Annual Meeting of ASH, Orlando, FL, December 6-10, 1996. Blood, 88(10):Supp#1:773, 1996.

356.A Greenberger JS, Epperly MW, Jahroudi N, Pogue-Geile KL, Goltry KL, Bray JA. Effects of ionizing irradiation on the hematopoietic microenvironment. Proc. of the 45th Annual Meeting of the Radiation Research Society, Providence, RI (5/97), S17-02, pp. 87, 1997.

357.A Epperly MW, Bray JA, Greenberger JS, Corey S. Differential effects on apoptosis of lyn and syk in irradiated B lymphocytes. Proc. of the 45th Annual Meeting of the Radiation Research Society, Providence, RI (5/97), P25-511, pp. 224, 1997.

358.A Guo XYD, Cuillerot JM, Wang T, Balague C, Randhawa G, Wu Y, Arlinghaus R, Greenberger JS, Colombowala I, Deisseroth A. Peptides binding to oligomerization and kinase domains of P210bcr/abl reverses the transformed phenotype of chronic myelogenous leukemia. Biomedicine, Washington, DC, 4/25/97.

359.A Epperly MW, Berry LA, Bray J, Kraeger S, Fisher A, Essenwein A, Zwacka R, Engelhardt JF, Travis EL, Greenberger JS. Intratracheal manganese superoxide dismutase gene therapy for prevention of irradiation-induced lung damage. The 39th Annual Meeting of ASTRO, Orlando, FL, October 19-22, 1997. Int. J. Radiat. Oncol. Biol. Phys., 39(Suppl. #1):208, A149, 1997.

360.A Kalend AM, Shimoga K, Kanade T, Greenberger JS. An artificial-vision responsive to patient motions during computer controlled radiation therapy. The 39th Annual Meeting of the Am. Assoc. for Physicists in Medicine, July 1997. Medical Physics, 24(6):1026, WE-D4-03, 1997.

361.A Jahroudi N, Kitney J, Greenberger JS, Bowser R. The effect of overexpression of amyloid precursor protein in different cell types of vascular tissue. The 25th Annual Meeting of the ISEH, Cannes, France, August 24-28, 1997. Exp. Hematol., 25(8):892, A574, 1997.

362.A Bush JE, Domach MM, DiMilla PA, Houck R, Goff JP, Greenberger JS. Fission time histograms of small numbers of CD34+lin- and CD34+lin+ cells by a novel tissue culturing device. The 25th Annual Meeting of the ISEH, Cannes, France, August 24-28, 1997. Exp. Hematol., 25(8): 808, A274, 1997.

363.A Goff JP, Shields DS, Greenberger JS. Effects of recombinant cytokines on the first cell doubling of single CD34+lin- human cord blood cells. The 25th Annual Meeting of the ISEH, Cannes, France, August 24-28, 1997. Exp. Hematol., 25(8):796, A233, 1997.

364.A Guo XY, Wang T, Garcia-Sanchez F, Greenberger JS. Tetracycline inducible expression of the p210bcr/abl in the 32D myeloid leukemia cell line generates growth factor independent growth *in vitro* but does not generate tumorigenesis in the nude mouse. Proc. Am. Assoc. Caner Res., Vol. 38, #3973, pp. 587, 1997.

365.A Bush JE, Goff JP, Greenberger JS, Houck RK, DiMilla PA, Domach MM. Division time histograms of hematopoietic stem cells acquired with a novel tissue culture device. American Institute of Chemical Engineers 1997 Annual Meeting, San Diego, CA, November 1997.

366.A Pogue-Geile KL, Gott JA, Greenberger JS. Accumulation of intracisternal type-A particle transcripts in FDC-P1JL26 cells is increased by contact with irradiated bone marrow stromal cells. The 25th Annual Meeting of the ISEH, Cannes, France, August 24-28, 1997. Exp. Hematol., 25(8):726, A95, 1997.

367.A Greenberger JS, Epperly MW, Goltry KL, Bray JA, Jahroudi N. Stromal cells of the hematopoietic microenvironment: Transplantability, inductive role in hematopoiesis, and response to ionizing irradiation. Tenth Symposium on Molecular Biology of Hematopoiesis and Treatment of Leukemias and Lymphomas, Hamburg, Germany, July 2-6, 1997. Acta Hematol., 98: (Suppl. #1):31, 1997.

368.A Jahroudi N, Ardekani A, Greenberger JS. Mechanism of endothelial specific regulation of the von Willebrand factor (vWf) gene expression. Tenth Symposium on Molecular Biology of Hematopoiesis and Treatment of Leukemias and Lymphomas, Hamburg, Germany, July 2-6, 1997. Acta Hematol., 98:(Suppl #1):50, 1997.

369.A Hurwitz DR, Cherington V, Chiang GG, Rubin H, Wang T, Sobolewski J, Galanopoulos T, Natale A, McGrath CA, Bizinkauska CB, Merrill W, Hansen M, Levine PH, Greenberger JS. Bone marrow stromal cells in ex vivo gene therapy of hemophilia A and B using a canine model. International Symposium on Gene Therapy For Hemophilia. Chapel Hill, NC, September 4-9, 1997.

370.A Glowacki J, Mizuno S, Epperly M, Greenberger JS. Juxtacrine mechanisms of osteoclastogenesis. Bone and the Hematopoietic and Immune Systems: A Scientific Workshop, Bethesda, MD, August 5-6, 1997.

371.A Bush JE, DiMilla P, Domach MM, Goff JP, Greenberger JS. Automated tissue culture device for continuous study of individual hematopoietic stem cells. American Chemical Society, San Francisco, CA, 1997.

372.A Epperly, MW, Bray JA, Greenberger JS. Increased hematopoietic activity in long-term bone marrow cultures from p53 recombinant deficient mice. The 39th Annual Meeting & Exposition of the American Society of Hematology, San Diego, CA, December 5-9, 1997. Blood, 90(10):Suppl. #1:490A, 1997.

373.A Goff JP, Shields DS, Bush JE, Domach MM, DiMilla PA. Kinetics of the first division of CD34+lin- cells: Manual compared to continuous automated observation and the influence of cytokines. The 39th Annual Meeting & Exposition of the American Society of Hematology, San Diego, CA, December 5-9, 1997. Blood, 90(10):Suppl. #1:475A, 1997.

374.A Jahroudi N, Gott JA, Greenberger JS. Irradiation results in decreased binding of an NF1-like protein to vWf core promoter sequences. The 39th Annual Meeting & Exposition of the American Society of Hematology, San Diego, CA, December 5-9, 1997. Blood, 90(10):Suppl. #1:287A, 1997.

375.A Hurwitz DR, Chiang GG, Cherington V, Rubin H, Wang T, Sobolewski J, Galanopoulos T, Natale A, McGrath CA, Bizinkauskas CB, Merrill W, Hansen M, Levine PH, Greenberger JS. Ex vivo gene therapy of hemophilia A and B using bone marrow stromal cells in a canine model. The 39th Annual Meeting & Exposition of the American Society of Hematology, San Diego, CA, December 5-9, 1997. Blood, 90(10):Suppl. #1:239A, 1997.

376.A Kalend AM, Shimoga K, Kanade T, Greenberger JS. An artificial-vision responsive to patient motions during computer controlled radiation therapy. Int. J. Radiat. Oncol. Biol. Phys., 39(2):Suppl., A2216, 1997.

377.A Greenberger JS, Bush JE, Goff JP, Shields DS, Koebler D, Houck RK, Domach MM, DiMilla PA. Investigating the influence of cytokines on the kinetics of self-renewal of hematopoietic stem cells using a novel

automated microscope-based bioreactor. Keystone Symposium on Tissue Engineering, Copper Mountain, CO, January 10-15, 1998.

378.A Goff JP, Shields DS, Greenberger JS. Influence of cytokines on the doubling kinetics and phenotype of single CD34+lin- cord blood cells. Keystone Symposium Gene Therapy For Hematopoietic Stem Cells In Genetic Disease and Cancer, Incline Village, NV, January 10-15, 1998.

379.A Epperly MW, Bray JA, Krager S, Berry LA, Gooding W, Engelhardt JF, Zwacka R, Travis EL, Greenberger JS. Intratracheal injection of an adenovirus containing a human MnSOD transgene protects against irradiation-induced lung damage. The 89th Annual Meeting of the AACR, New Orleans, LA, March 28 - April 1, 1998. Proc. of the AACR, 39:515A (#3505), 1998.

380.A Petersen BE, Goff JP, Bowen WC, Shields DS, Greenberger JS, Michalopoulos GK. Thy-1+ sorted hepatic oval cells in culture maintain oval cell phenotypic markers. Experimental Biology, American Society for Investigative Pathology, San Francisco, April 18-22, 1998 (Poster Discussion). FASEB J., 12(4):Part I:468A(#2722), March 17, 1998.

381.A Epperly MW, Krager S, Bray JA, Stickle R, Berry LM, Zwacka R, Engelhardt JF, Travis EL, Greenberger JS. Intrapulmonary expression of a MnSOD transgene protects the lung from ionizing irradiation damage. The 46th Annual Meeting of the Radiation Research Society, Louisville, KY, April 25-29, 1998, p. 121, #P07-124.

382.A Epperly MW, Bray JA, Escobar P, Watkins SC, Bigbee WL, Greenberger JS. Increased radioresistance by overexpression of human MnSOD in the hematopoietic progenitor cell line 32D cl 3. The Forty-Sixth Annual Meeting of the Radiation Research Society, Louisville, KY, April 25-29, 1998, p. 122, #P07-125.

383.A Stickle R, Epperly MW, Greenberger JS. Plasmid/liposome delivery of the human MNSOD transgene to the murine esophagus for prevention of irradiation-induced esophagitis. The First Annual Meeting Of the American Society Of Gene Therapy, Seattle, WA, May 28-31, 1998; p. 60A (238).

384.A XYD, Wang T, Garcia-Sanchez F, Bachier C, Dizon D, Kufe D, Greenberger JS, Arlinghaus R, Deisseroth A. Increases in the ratio of P210bcrabl/P145c-abl proteins through use of a tetracycline regulated enhancer for a bcr/abl transcription unit in the 32D myeloid leukemia cell line increases resistance to chemotherapy and shows that IL-3 independent proliferation occurs at P210 bcr/abl/P145c-abl ratio of 0.5. The 89th Annual Meeting of the AACR, New Orleans, LA, March 28 - April 1, 1998. Proc. of the AACR, 39:466A (#3166), 1998.

385.A Epperly MW, Shiffer C, Escobar P, Bray JA, Watkins SC, Bigbee WL, Greenberger JS. Overexpression of MnSOD *in vitro* increases the radioresistance of 32D cl 3 hematopoietic progenitor cells. The 89th Annual Meeting of the AACR, New Orleans, LA, March 28 - April 1, 1998. Proc. of the AACR, 39:78A (#532), 1998.

386.A Epperly MW, Bray JA, Escobar P, Bigbee WL, Watkins SC, Greenberger JS. Overexpression of the human MnSOD transgene *in vitro* protects 32D cl 3 murine hematopoietic progenitor cells from irradiation-induced apoptosis. ASTRO 40th Annual Scientific Meeting, Phoenix, AZ, October 25-29, 1998. IJROBP, 42(1): Suppl. P125 (#23), 1998.

387.A Stickle RL, Epperly, MW, Greenberger JS. Prevention of irradiation-induced esophagitis by intraesophageal plasmid/liposome delivery of the human manganese superoxide dismutase (MnSOD) transgene. ASTRO 40th Annual Scientific Meeting, Phoenix, AZ, October 25-29, 1998. IJROBP, 42(1): Suppl. P238 (#2822), 1998.

388.A Jahroudi N, Kitney J, Greenberger JS, Bowser R. Endothelial cell dysfunction in response to intracellular overexpression of amyloid precursor protein. The 27th Annual Meeting of the International Society of Experimental Hematology, Vancouver, BC, Canada, August 1-5, 1998. Exp. Hematology, 26(8):717, 1998.

389.A Goff JP, Shields DS, Greenberger JS. Phenotypic self-renewal of single CD34+Lin- cells: The influence of cytokines on the first cell division. The 27th Annual Meeting of the International Society of Experimental Hematology, Vancouver, BC, Canada, August 1-5, 1998. Exp. Hematology, 26(8):714, 1998.

390.A Epperly MW, Bray JA, Escobar P, Bigbee WL, Greenberger JS. Overexpression of a human MnSOD transgene protects the hematopoietic progenitor cell line 32D cl 3 from irradiation-induced damage. The 27th Annual Meeting of the International Society of Experimental Hematology, Vancouver, BC, Canada, August 1-5, 1998. Exp. Hematology, 26(8):721, 1998.

391.A Putative von Willebrand factor gene regulatory elements identified by DNASE I mapping. Kleinschmidt AM, Greenberger JS, Jahroudi N. The 27th Annual Meeting of the International Society of Experimental Hematology, Vancouver, BC, Canada, August 1-5, 1998. Exp. Hematology, 26(8):717, 1998.

392.A Bush J, DiMilla P, Domach M, Shields D, Goff J, Greenberger JS. Motility and morphology of individual primitive hematopoietic cells cultured in media with different cytokine combinations. The 27th Annual Meeting of the International Society of Experimental Hematology, Vancouver, BC, Canada, August 1-5, 1998. Exp. Hematology, 26(8):734, 1998.

393.A Greenberger JS, Pogue-Geile K, Jahroudi N, Epperly M, Goltry K, Goff J. Interaction of hematopoietic progenitor cells and bone marrow stromal cells during irradiation leukemogenesis. The 11th International Symposium On Molecular Biology Of Hematopoiesis, Bormio, Italy, June 25-29, 1998.

394.A Chiang GG, Cherington V, Rubin H, Wang T, Sobolewski J, Galanopoulos T, Gaffney A, McGrath CA, Levine PH, Greenberger JS. Ex vivo gene therapy of hemophilia A and B using bone marrow stromal cells in a canine model. Cold Spring Harbor Symposium. September 23-27, 1998.

395.A Epperly MW, Bray J, Bash S, Berry L, Greenberger JS. Human MnSOD transgene expression in 32D cl 3 murine hematopoietic progenitor cells protects against irradiation apoptosis through decreased caspase 3 and PARP activation. The 40th Annual Meeting of ASH, Miami Beach, FL, December 4-8, 1998. Blood, 2(10):Suppl.#1: P197A (#802), 1998.

396.A Bahnson AB, Koebler D, Bush J, Athanassiou H, Houck R, Greenberger JS. Automated technology for continuous monitoring of single hematopoietic cells. The 40th Annual Meeting of ASH, Miami Beach, FL, December 4-8, 1998. Blood, 92(10):Suppl.#1: P141B (#3577), 1998.

397.A Pogue-Geile KL, Heidmann T, Greenberger JS. The effect of direct and indirect (via stromal cells) gamma irradiation on the level of IAP transcription and on the frequency of IAP retrotransposition in hematopoietic cells. The 40th Annual Meeting of ASH, Miami Beach, FL, December 4-8, 1998. Blood, 92(10):Suppl.#1: P184A (#3777), 1998.

398.A Goff JP, Shields DS, Greenberger JS. Proliferation response of single quiescent cord blood CD34+Thy-1+Lin- cells: Induction of division compared to continued quiescence and retention of phenotype. The 40th Annual Meeting of ASH, Miami Beach, FL, December 4-8, 1998. Blood, 92(10):Suppl.#1: P60A (#238), 1998.

399.A Jahroudi N, Greenberger JS. NFY transcription factor interacts with CCAAT element in vWf core promoter sequences. The 40th Annual Meeting of ASH, Miami Beach, FL, December 4-8, 1998. Blood, 92(10):Suppl.#1: p548A (#2256), 1998.

400.A Epperly MW, Bray JA, Bash S. Greenberger JS. Overexpression of MnSOD in 32D cl 3 cells increases irradiation resistance by stabilization of the mitochondrial membrane and inhibition of caspase-3 and PARP activation. Proc. of the AACR Annual Meeting, 1999. AACR, 40:551 (#3634), 1999.

401.A Ex vivo gene therapy of hemophilia A and B using bone marrow stromal cells in a canine model. Hurwitz DR, Cherington V, Rubin H, Wang T, Sobolewski J, Galanopoulos T, Gaffney A, McGrath CA, Levine PH, Greenberger, JS. Blood, 92(10):Suppl.#1: P382 (#4651), 1998.

402.A Epperly MW, Bray J, Sikora C, Greenberger JS. Pulmonary radioprotective intratracheal injections of MnSOD plasmid/liposomes do not protect orthotopic lung tumors from irradiation. The 11th International Conference of Radiation Research, Dublin, Ireland, July 18-23, 1999.

403.A Greenberger JS, Bray JA, Defilippi S, Sikora C, Epperly MW. Radioprotective gene therapy for prevention of ionizing irradiation-induced pulmonary damage and esophagitis. The 2nd Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 9-13, 1999. ASGT, 28A:(#109), 1999.

404.A Jahroudi N, Forman J, Greenberger JS. Irradiation induction of the vWf promoter is mediated through the NFY transcription factor. The 28th Annual Meeting of the International Society of Experimental Hematology, Monte Carlo, Monaco, July 10-14, 1999. Exp. Hematol., 27(7):Suppl.#1:60(#94), 1999.

405.A Epperly MW, Defilippi S, Bray JA, Sikora C, Luketich JD, Koe G, Liggitt D, Greenberger JS. Overexpression of manganese Superoxide dismutase in human esophagus protects against irradiation-induced apoptosis. The 2nd Annual Meeting of the American Society of Gene Therapy Washington, DC, June 9-13, 1999. ASGT, 170A(#674), 1999.

406.A Epperly MA, Bray JA, Defilippi S, Greenberger JS. Overexpression of manganese superoxide dismutase in the 32D cl 3 murine hematopoietic progenitor cell line prevents apoptosis induced by ionizing irradiation, IL-3 withdrawal, or exposure to TNF-$\alpha$. The 28th Annual Meeting of the International Society of Experimental Hematology, Monte Carlo, Monaco, July 10-14, 1999. Exp. Hematol., 27(7):56(#78), 1999.

407.A Goff JP, Shields DS, Greenberger JS. Variation in proliferation response of single quiescent CD34+thy1+lin- cells: Induction of division or continued quiescence and retention of phenotype. The 28th

Annual Meeting of the International Society of Experimental Hematology, Monte Carlo, Monaco, July 10-14, 1999. Exp. Hematol., 27(7):118(#309), 1999.

408.A Boggs SS, Patrene K, Lu J, Epperly MW, Greenberger JS. The *op/op* stromal cell line derived from bone marrow of osteopetrotic mice is the only line of many tested that supports proliferation and development of NK cells from their precursors. The 28th Annual Meeting of the International Society of Experimental Hematology, Monte Carlo, Monaco, July 10-14, 1999. Exp. Hematol., 27(7):Suppl. #1:37(#4), 1999.

409.A Epperly MW, Bray JA, Sikora C, Greenberger JS. Pulmonary radioprotective intratracheal injections of MnSOD plasmid/liposomes do not protect orthotopic lung tumors from irradiation. The 2nd Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 9-13, 1999. ASGT, 172A:(#680), 1999.

410.A Petersen BE, Bowen WC, Patrene KD, Mars WM, Sullivan AK, Murase N, Boggs SS, Greenberger JS, Goff JP. Bone marrow as a potential source of hepatic oval cells. The Falk Symposium #113, Cytokines and Cell Homeostasis in the Gastroinstestinal Tract. Regensburg/Germany, September 16-18, 1999.

411.A Greenberger JS, Bray JA, Sikora C, Epperly MA. Radioprotection of the lung by intratracheal injections of MnSOD plasmid/liposome complex does not protect orthotopic lung tumors. The 40th Annual Meeting of ASTRO, Phoenix, AZ, October 25-29, 1999.

412.A Lavelle J, Epperly MW, Bray JA, Defilippi S, Zeidel M, Greenberger JS. Prevention of irradiation-induced bladder damage by MnSOD plasmid/liposome gene therapy. The 40th Annual Meeting of ASTRO, Phoenix, AZ, October 25-29, 1999.

413.A Epperly MW, Bray JA, Defilippi S, Greenberger JS. Human MnSOD transgene expression inhibits apoptosis induced by IL-3 withdrawal or TNF-$\alpha$ as well as ionizing irradiation in 32D cl 3 murine hematopoietic progenitor cells. The 40th Annual Meeting of ASTRO, Phoenix, AZ, October 25-29, 1999. IJROBP, 45(3):294 (#2031), 1999.

414.A Bray JA, Epperly MW, Defilippi S, Koe G, Liggitt D, Luketich J, Greenberger JS. Prevention of irradiation-induced apoptosis in human esophagus sections *in vitro* by overexpression of the manganese Superoxide dismutase transgene. The 40th Annual Meeting of ASTRO, Phoenix, AZ, October 25-29, 1999. IJROBP, 45(3):302 (#2048), 1999.

415.A Mueller SM, LeBoff M, Greenberger JS, Bleiberg I, Glowacki J. Effects of age on stimulation of osteoblastogenesis by 1,25 dihydroxyvitamin D3 in human bone marrow. The 21st Annual Meeting, of ASBMR Annual Meeting, St. Louis, MO, September 30 - October 4, 1999. JBMR, 14: Suppl. #1, p. 5307 (#F487), 1999.

416.A Zhang X, Goff JP, Shields DS, Wechuck J, Seifried W, Rouse R, Wolfe D, Goins WF, Greenberger JS, Glorioso JC. Triple mutant herpes simplex virus vector mediated gene transfer to human umbilical cord blood CD34+ cells and the long-term expression of the virus genome. The 41st Annual Meeting of the American Society of Hematology, New Orleans, LA, December 3-7, 1999. Blood, 94(10):Suppl. #1:180A (#785), 1999.

417.A Goff JP, Shields DS, Meuller S, Glowacki J, Greenberger JS. Matrix and growth factors promote adherence, proliferation, and osteoblastic differentiation of single Stro-1+ cells. The 41st Annual Meeting of the

American Society of Hematology, New Orleans, LA, December 3-7, 1999. Blood, 94(10):Suppl. #1:164B (#3908), 1999.

418.A Gorbunov NV, Epperly MW, Bigbee KL, Pogue-Geile KL, Draviam R, Day B, Wald N, Greenberger JS. Radiation-induced activation of nitric oxide synthase II (NOS II) in D2XRII murine bone marrow stromal cells. Experimental Biology 99, Washington, DC (April 17-21, 1999). FASEB J., 13(4):(Abstract#254.22), 1999.

419.A Epperly MW, Defilippi S, Sikora C, Greenberger JS. Mitochondrial protection inhibits apoptosis in 32D cl 3 murine hematopoietic progenitor cell lines overexpressing MnSOD, Bcl-2, or Bcl-xl. The 41st Annual Meeting of the American Society of Hematology, New Orleans, LA, December 3-7, 1999. Blood, 94(10):Suppl. #1:480A (#2145), 1999.

420.A Bahnson A, Koebler D, Athanassiou H, Lisovich A, McKenzie L, Houck R, Shields D, Goff J, Greenberger JS. Motility and division times of CD34+lin- cord blood cells in different cytokine and attachment factor combinations. The 41st Annual Meeting of the American Society of Hematology, New Orleans, LA, December 3-7, 1999. Blood, 94(10):Suppl. #1:162B (#3900), 1999.

421.A Epperly MW, Defilippi S, Sikora C, Gretton J, Greenberger JS. Radioprotection of lung and esophagus by overexpression of the human MnSOD transgene. International Conference on Low-Level Radiation Injury and Medical Countermeasures. Sponsored by the Armed Forces Radiobiology Research Institute, Bethesda, MD, November 8-10, 1999. LLR-99 (Session 2. Prevention and Treatmens; Session 2B. Protective Devices and Strategies, p. 33.

422.A Wong HY, Epperly MW, Godfrey T, Greenberger JS, Luketich JD. MnSOD overexpression protects normal cells during photodynamic therapy (PDT). Eastern-Atlantic Student Research Forum, Miami, FL, February 23-26, 2000. ESRF:2000 Program & Abstract Book, p. 66 (Abstract #P06).

423.A Wong HY, Epperly MW, Godfrey T, Greenberger JS, Luketich JD. Manganese superoxide dismutase (MnSOD) gene insertion protects normal cells during photodynamic therapy. Medical Student Research Forum, Galveston, Texas, 2000.

424.A Wong HS, Epperly MW, Godfrey T, Greenberger JS, Luketich J. Manganese superoxide dismutase (MnSOD) gene insertion protects normal cells during photodynamic therapy (PDT). The 80th Annual Meeting Of The American Assoc. of Thoracic Surgery, Year 2000.

425.A Greenberger JS. Biological effects on non-irradiated hematopoietic progenitor cells cocultivated with irradiated bone marrow stromal cells. The 47th Annual Scientific Meeting of the Radiation Research Society, Albuquerque, New Mexico, April 29 - May 3, 2000. Radiation Research Program Abstract Book, p. 62 (Abstract #S16-3), 2000.

426.A Greenberger JS. Radioprotective gene therapy: Reduction of pulmonary damage from ionizing irradiation by manganese Superoxide dismutase-plasmid/liposome administration. The 47th Annual Scientific Meeting of the Radiation Research Society, Albuquerque, New Mexico, April 29 - May 3, 2000. Radiation Research Program Abstract Book, p. 45 (Abstract #L04-2), 2000.

427.A Epperly MW, Sikora C, Epstein CJ, Travis EL, Greenberger JS. Intratracheal administration of MnSOD plasmid/liposome (PL) complex improves the decreased pulmonary radiation resistance of SOD2 deficient mice. The 47th Annual Scientific Meeting of the Radiation Research Society, Albuquerque, New Mexico, April 29 - May 3, 2000. Radiation Research Program Abstract Book, p. 145 (Abstract #P315), 2000.

428.A Epperly MW, Defilippi S, Gretton J, Sikora C, Greenberger JS. MnSOD-PL complex protects normal lung but not orthotopic 3LL Lewis lung carcinoma from irradiation. The 47th Annual Scientific Meeting of the Radiation Research Society, Albuquerque, New Mexico, April 29 - May 3, 2000. Radiation Research Program Abstract Book, p. 115 (Abstract #P193), 2000.

429.A Epperly MW, Sikora C, Defilippi S, Gretton J, Greenberger JS. Expression of human MnSOD or Bcl-xl transgene blocks irradiation apoptosis by stabilization of the mitochondrial membrane. The 47th Annual Scientific Meeting of the Radiation Research Society, Albuquerque, New Mexico, April 29 - May 3, 2000. Radiation Research Program Abstract Book, p. 72 (Abstract #P19), 2000.

430.A Epperly MW, Gretton J, Defilippi S, Liggitt D, Koe G, Greenberger JS. Prevention of irradiation induced esophagitis by intraesophageal injection of MnSOD-plasmid/liposome complex. The 47th Annual Scientific Meeting of the Radiation Research Society, Albuquerque, New Mexico, April 29 - May 3, 2000. Radiation Research Program Abstract Book, p. 114 (Abstract #P192), 2000.

431.A Greenberger JS, Epperly MW, Lavelle J, Zeidel M. Radioprotective gene therapy using MnSOD plasmid/liposomes. SOD Conference, Institute Pasteur, France, May 18-20, 2000.

432.A Mueller SM, LeBoff MS, Greenberger JS, Bleiberg I, Glowacki J. Age-related decline in 1,25 Dihydroxyvitamin D[1]s stimulation of osteoblast differentiation in human marrow. (ENDO 2000) The Endocrine Society 82nd Annual Meeting, Toronto, Ontario, Canada, June 21-24, 2000. Abstract # 261 page 72.

433.A Epperly MW, Defilipi SJ, Gretton JE, Liggitt D, Koe G, Greenberger JS. Intraesophageal injection of clinical grade manganese Superoxide dismutase (MnSOD) plasmid/liposome (PL) complex blocks irradiation-induced murine esophagitis. ASGT 3rd Annual Meeting, Denver, CO, May 31 – June 4, 2000. Molecular Therapy, 1(5):S160 (Abstract#415), 2000.

434.A Greenberger JS, Defilipi SJ, Sikora CA, Gretton JE, Epperly MW. Overexpression of the human manganese superoxide dismutase (MnSOD) transgene prevents irradiation-induced apoptosis by stabilization of the mitochondria. ASGT 3rd Annual Meeting, Denver, CO, May 31 - June 4, 2000. Molecular Therapy, 1(5):S129 (Abstract#329), 2000.

435.A Greenberger JS, Goff J, Shields J, Shields D, Yancy K, Glowacki J, Bahnson, A. Use of a novel single cell bioreactor for evaluation of new cellular systems in tissue engineering. Pittsburgh Orthopedic Tissue Engineering Symposium, Pittsburgh Marriott City Center, Pittsburgh, PA, April 16-19, 2000.

436.A Epperly MW, Defilippi SJ, Sikora CA, Gretton JE, Pierce L, Peterson J, Kagan V, Greenberger JS. Overexpression of the human MnSOD transgene prevents irradiation apoptosis of 32D cl 3 hematopoietic progenitor cells by stabilization of the mitochondria. The 29th Annual Scientific Meeting of the International Society Of Experimental Hematology, Tampa, FL July 8-11, 2000. Exp. Hematol., 28(7):Suppl. #1:35 (Abstract #14), 2000.

437.A Epperly MW, Defilippi SJ, Gretton JE, Sikora C, Greenberger JS. Intratracheal injection of MnSOD plasmid/liposome (MnSOD-PL) protects normal lung but not orthotopic thoracic tumors from irradiation. The 29th Annual Scientific Meeting of the International Society Of Experimental Hematology, Tampa, FL July 8-11, 2000. Exp. Hematol., 28(7):Suppl. #1:36 (Abstract #16), 2000.

438.A Goff JP, Shields DS, Hanley KA. Identification of individual CD34+lin- daughter cells that retain multilineage differentiation potential after one division. The 29th Annual Scientific Meeting of the International Society Of Experimental Hematology, Tampa, FL July 8-11, 2000. Exp. Hematol., 28(7):Suppl. #1:65 (Abstract #108), 2000.

439.A Epperly MW, DeFilippi SJ, Sikora CA, Gretton JA, Belani CP, Luketich JD, Liggitt D, Koe G, Greenberger JS. Intraesophageal injection of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) protects the murine esophagus from ionizing irradiation-induced esophagitis and late esophageal stricture. The 8th Annual Meeting of the European Society of Gene Therapy, Stockholm, Sweden, October 7-10, 2000 (Abstract #P146). Gene Medicine, 2(Suppl. #5):68, 2000.

440.A Greenberger JS, Epperly MW, DeFilippi SJ, Gretton JA, Sikora CA. Pulmonary radioprotective intratracheal manganese Superoxide dismutase-plasmid/liposome (MnSOD-PL) injection does not protect orthotopic Lewis lung carcinoma from irradiation killing. The 8th Annual Meeting of the European Society of Gene Therapy, Stockholm, Sweden, October 7-10, 2000. Gene Medicine, 2(Suppl. #5):68, 2000.

441.A Greenberger JS, Defilippi SJ, Gretton JE, Liggitt HD, Koe G, Epperly MW. Irradiation-induced murine esophagitis is blocked by intraesophageal injection of clinical grade MnSOD plasmid/liposome (MnSOD-PL) complex. The 42nd Annual Meeting of the American Society For Therapeutic Radiology and Oncology, Boston, MA, October 22-26, 2000. IJROBP, 48(3):(Suppl.#2000):157, p.190, 2000.

442.A Epperly MW, Sikora CA, Defilippi SJ, Greenberger JS. Overexpression of the MnSOD transgene in murine hematopoietic progenitor cell line 32D cl 3 reduces reactive oxygen species (ROS) production following irradiation. The 42nd Annual Meeting of the American Society For Therapeutic Radiology and Oncology, Boston, MA, October 22-26, ASTRO (Abstract #1460), 2000. IJROBP, 48(3):(Suppl.#2000):2022, p.276, 2000.

443.A Lavelle JP, Epperly MW, Defilippi SJ, Zeidel ML, Kalend AM, Greenberger JS. Reduction of irradiation-induced cystitis by MnSOD plasmid/liposome (MnSOD-PL) gene therapy. The 42nd Annual Meeting of the American Society For Therapeutic Radiology and Oncology, Boston, MA, October 22-26, ASTRO (Abstract #1477), 2000. IJROBP, 48(3):(Suppl.#2000):2034, p.281, 2000.

444.A Kalend AM, Shimoga K, Hua W, Clark K, Rahman M, Kanade T, Greenberger JS. A robotics artificial vision (RAV) system to automate patient multiple non-coplanar treatment fields, and to allow free breath respiratory gated radiation therapy. The 42nd Annual Meeting of the American Society For Therapeutic Radiology and Oncology, Boston, MA, October 22-26, 2000. IJROBP, 48(3):(Suppl.#2000):111, p.167, 2000.

445.A Gorbunov NV, Epperly MW, Bigbee WL, Draviam R, Morris JE, Greenberger JS, Thrall BD. Activation of nuclear factor kß, nitric oxide synthase II (iNOS), and Tp53 in response of bone marrow stromal cells to the oxidative stress induced by hydrogen peroxide (H2O2). The 7th Annual Meeting of the Oxygen Society, November 16, 20, 2000, San Diego, CA, (Abstract #161).

446.A Wong HY, Epperly MW, Godfrey T, Greenberger JS, Luketich JD. Inflammatory cytokine mRNA level elevation following esophageal photodynamic therapy in mice and in humans. International Organization For Statistical Studies on Diseases of the Esophagus (O.E.S.O.). World Congress, September 2-6, 2000. Paris, France. (Panel No. 77).

447.A Wong HY, Epperly MW, Godfrey T, Greenberger JS, Luketich JD. Overexpression of the human manganese superoxide dismutase (MnSOD) transgene protects 32D cl 3 hematopoietic progenitor cells from photodynamic therapy-induced apoptosis: potential implication for Barrett[1]s esophagus. International Organization For Statistical Studies on Diseases of the Esophagus (O.E.S.O.). World Congress, September 2-6, 2000. Paris, France. (Panel No. 78).

448.A Greenberger JS. Combinatorial Cell Culture and Tissue Engineering. 2001 Salivary Glands and Saliva Gordon Research Conference, Holiday Inn, Ventura, CA, February 11-16, 2001.

449.A Greenberger JS, Goff J, Bahnson A, Koebler D, Houck R. Continuous real-time imaging of single human umbilical cord blood hematopoietic stem cell candidates using an automated combinatorial cell culture system. Tissue Engineering Meeting, Florida 2001.

450.A Greenberger JS. Applications of combinatorial cell culture to solving problems in tissue engineering of osteoblasts and chrondrocytes. The Knowledge Foundation[1]s Conference On: Advances In Tissue & Genetic Engineering For The Treatment Of Arthritic Diseases. Wyndam Hotel, Boston, MA, September 11-12, 2000.

451.A Greenberger JS, Sikora CA, Defilippi SJ, Gretton JE, Epperly MW. Inhibition of irradiation-induced apoptosis in 32D cl 3 cells by overexpression of the manganese superoxide dismutase (MnSOD) transgene is through reduction of reactive oxygen species (ROS). The 42nd Annual Meeting of ASH. The Moscone Center, San Francisco, CA. December 1-5, 2000. Blood, 96(11):81A (Abstract #344), 2000.

452.A Epperly MW, Sikora CA, Defillip SJ, Gretton JE, Greenberger JS. Irradiation-induced inflammatory MRNA levels differ between bone marrow stromal cells compared to hematopoietic progenitor cells. The 42nd Annual Meeting of ASH. The Moscone Convention Center, San Francisco, CA. December 1-5, 2000. Blood, 96(11):132b (Abstract #4261), 2000.

453.A Goff JP, Shields DS, Hanley-Yanez K, Greenberger JS. Identification of individual CD34+lin- daughter cells that retain multilineage differentiation potential after the first division. The 42nd Annual Meeting of ASH. The Moscone Convention Center, San Francisco, CA. December 1-5, 2000. Blood, 96(11):663A(Abstract #2851), 2000.

454.A Blumberg D, Cook T, Epperly MW, Jefferson M, Liu K, Kibbe M, Greenberger JS, Robbins P, Billiar T. Adenoviral delivery of WT p53 augments the cytotoxicity of nitric oxide and radiation in human colon cancer cells associated with an increased S phase, G2M arrest, and apoptosis. The 92nd Annual Meeting of AACR, Ernest N. Morial Convention Center, New Orleans, LA. March 24-28, 2001.

455.A Epperly JS, Gretton JE, Defilippi SJ, Sikora CA, Bar-Sagi D, Archer HM, Greenberger JS. Hemagglutinin (HA) epitope-tagged manganese Superoxide dismutase-plasmid/liposome (MnSOD-PL) gene

therapy to the esophagus: Prevention of irradiation-induced esophagitis. The 92nd Annual Meeting of AACR, Ernest N. Morial Convention Center, New Orleans, LA. March 24-28, 2001.

456.A Greenberger JS, Sikora CA, Defilippi SJ, Gretton JE, Epperly MW. Irradiation-induced inflammatory mRNA levels differ between bone marrow stromal cells compared to hematopoietic progenitor cells. The 92nd Annual Meeting of AACR, Ernest N. Morial Convention Center, New Orleans, LA. March 24-28, 2001.

457.A Greenberger JS. (Invited Presentation #S-09-4): Gene therapy for radiation protection with manganese superoxide dismutase-plasmid/liposomes (MnSOD-PL). The 48th Annual Meeting of the Radiation Research Society, San Juan, Puerto Rico, April 21-25, 2001 (p. 72, #510-4).

458.A Gorbunov NV, Morris JE, Greenberger JS, Thrall BD. Use of a novel clonal murine bone marrow stromal cell line (D2XRIIGFP24) as a fluorescent cytosensor for assessment of genotoxic stress. In: "Alternative Toxicological Methods for the New Millennium: Science and Application", Bethesda, MD, p. 24, May 1-5, 2001.

459.A Greenberger JS, Epperly MW, Sikora CA, Defilippi SJ, Gretton JE, Liggitt D, Koe G, Luketich JD, Belani CP. Optimization of therapeutic ratio in chemoradiotherapy of non-small cell lung carcinoma (NSCLC) by manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) radioprotective gene therapy. The 37th ASCO Annual Meeting, Moscone Convention Center, San Francisco, CA, May 12-15, 2001. Proc. of ASCO 2001, 20:260A (#1037), 2001.

460.A Goff JP, Shields DS, Hanley KA, Greenberger JS. Heterogeneity and conservation of the lymphoid myeloid differentiation capacity of human umbilical cord blood CD34+lin- hematopoietic stem cell populations. The 37th ASCO Annual Meeting, Moscone Convention Center, San Francisco, CA, May 12-15, 2001. Proc. of ASCO 2001, 20:20A (#76), 2001.

461.A Epperly MW, Lavelle JP, Defilippi SJ, Kalend AM, Zeidel ML, Greenberger JS. Manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) gene therapy prevents irradiation-induced cystitis. The 48th Annual Meeting of the Radiation Research Society, San Juan, Puerto Rico, April 21-25, 2001 (p. 111, #p07-98).

462.A Epperly MW, Goff JP, Sikora CA, Shields DS, Greenberger JS. Bone marrow origin of esophageal stem cells. The 48th Annual Meeting of the Radiation Research Society, San Juan, Puerto Rico, April 21-25, 2001 (p. 109, #p07-91).

463.A Blumberg D, Epperly MA, Jefferson M, Liu K, Cook T, Chung J, Kibbe M, Greenberger JS, Billiar T. Gene therapy with the human inducible nitric oxide synthase gene radiosensitizes human cancer cells. The 48th Annual Meeting of the Radiation Research Society, San Juan, Puerto Rico, April 21-25, 2001 (p. 110, #p07-97).

464.A Epperly MW, Sikora CA, Perez RG, Zigmond MJ, Greenberger JS. Overexpression of the manganese superoxide dismutase (MnSOD) transgene blocks induction of apoptosis by 6 hydroxydopamine in a murine dopaminergic cell line. The 4th Annual Meeting of the American Society of Gene Therapy, Seattle, WA (May 30 - June 3, 2001). (Abstract #331). Molecular Therapy, 3(5):5116, 2001.

465.A Epperly MW, Guo HL, Jefferson M, Cook T, Sikora CA, Greenberger JS, Blumberg D. Intratumoral injections of adenovirus containing inducible nitric oxide synthase transgene (iNOS) sensitizes SNU-1040 human colon tumors to ionizing irradiation. The 4th Annual Meeting of the American Society of Gene Therapy, Seattle, WA (May 30 - June 3, 2001). (Abstract #602). Molecular Therapy, 3(5):5211, 2001.

466.A Epperly MW, Goff JP, Shields DS, Sikora CA, Bar-Sagi, Greenberger JS. Bone marrow-derived esophageal stem cells (ESCs) are targets for manganese superoxide dismutase-plasmid/liposome (MnSOD PL) radioprotective gene therapy. The 4th Annual Meeting of the American Society of Gene Therapy, Seattle, WA (May 30 - June 3, 2001). Vol. 3(5): 5216, (Abstract #619), 2001.

467.A Wechuck J, Wolfe D, Goins W, Wendell S, Goff J, Greenberger JS, Ataai M, Glorioso J. Gene transfer to stem cells using herpes simplex virus type I (HSV-1) vector. (Abstract #126). Molecular Therapy, 3(5):547, 2001.

468.A Greenberger JS, Gretton JE, DeFilippi SJ, Sikora CA, Epperly MW. Esophageal radioprotection in the lung cancer patient by MnSOD-PL gene therapy. Meeting for Advances In Lung Cancer, Rountop, TX, March 2001.

469.A Greenberger JS, Sikora CA, DeFilippi SJ, Gretton JE, Epperly MW. Bone marrow stromal cell involvement in irradiation pulmonary fibrosis. The 30th Annual Meeting of the International Society for Experimental Hematology (ISEH). Tokyo, Japan. August 25, 28, 2001. Exp. Hematol., 29(8):Suppl. #1:86 (Abstract #337), 2001.

470.A Epperly MW, Sikora CA, Shields DS, Goff JP, Greenberger JS. Bone marrow origin of esophageal stem cells. The 30th Annual Meeting of the International Society for Experimental Hematology (ISEH). Tokyo, Japan. August 25, 28, 2001. Exp. Hematol., 29(8):Suppl. #1:85 (Abstract #336), 2001.

471.A Shimoga KB, Kalend AM, Clark K, Greenberger JS. SmartGate: A fuzzy-logic based intelligent system for respiratory gating. The 43rd Annual Meeting of the American Society for the Therapeutic Radiology and Oncology (ASTRO), San Francisco, CA, November 4-8, 2001. IJROBP, 51(3):Suppl. #1:29 (Abstract #45), 2001.

472.A Zigmond MJ, Epperly MW, Sikora CA, Perez R, Greenberger JS. Dopaminergic neurons are protected from ionizing irradiation and 6-hydroxydopamine-induced apoptosis by overexpression of the manganese superoxide dismutase (MnSOD) transgene. The 43rd Annual Meeting of the American Society for the Therapeutic Radiology and Oncology (ASTRO), San Francisco, CA, November 4-8, 2001. . IJROBP, 51(3):Suppl. #1:231, (Abstract #2013), 2001.

473.A Greenberger JS, DeFilippi SJ, Gretton JE, Sikora CA, Archer HA, Bar-Sagi D, Epperly MW. Bone marrow origin of esophageal stem cells. The 43rd Annual Meeting of the American Society for the Therapeutic Radiology and Oncology (ASTRO), San Francisco, CA, November 4-8, 2001. IJROBP, 51(3):Suppl. #1:130 (Abstract #232), 2001.

474.A Epperly MW, Sikora CA, Gretton JE, DeFilippi SJ, Greenberger JS. Late upregulation of VCAM-1 and ICAM-1 in irradiated murine pulmonary endothelial and lung parenchymal cells precedes recruitment of bone marrow-derived macrophages and fibrosis. The 43rd Annual Meeting of the American Society for the

Therapeutic Radiology and Oncology (ASTRO), San Francisco, CA, November 4-8, 2001. . IJROBP, 51(3):Suppl. #1:129 (Abstract #230), 2001.

475.A Gorbunov NV, Morris JE, Greenberger JS, Thrall BD. Inhibitors of nitric oxide synthase block the induction of p53 by hydrogen peroxide. Society of Toxicology Meeting, 60(1):47, (Abstract #227), March 2001.

476.A Greenberger JS, Epperly MW, Sikora CA, Defilippi SJ, Gretton JE, Luketich JD, Belani C, Liggitt D, Koe G. Optimization of therapeutic ratio in chemoradiotherapy of non-small cell lung carcinoma (NSCLC) by manganese Superoxide dismutase-plasmid/liposome (MnSOD-PL) radioprotective gene therapy. The 9th SPORE Investigator's Workshop, Omni Shoreham Hotel, Washington, DC, July 15-17, 2001 (Page 25).

477.A Epperly MW, Gretton JE, Sikora CA, Greenberger JS. Importance of mitochondrial localization of Superoxide dismutase in preventing irradiation-induced apoptosis. The American Society of Hematology 43rd Annual Meeting and Exposition, Orlando, FL, December 7-11, 2001. Blood, 98(11):555a (Abstract #2320), 2001.

478.A Guo HL, Epperly MW, Wolfe DP, Glorioso JC, Greenberger JS, Blumberg D. Overexpression of manganese Superoxide dismutase (MnSOD) protects against murine intestinal damage induced by total body irradiation. The American Society of Hematology 43rd Annual Meeting and Exposition, Orlando, FL, December 7-11, 2001. Blood, 98(11):213a (Abstract #895), 2001.

479.A Sikora CA, Epperly MW, Chang J, Goff JP, Shields DS, Guo HL, Greenberger JS. Bone marrow provides a source of stem cells to replace irradiation-damaged esophagus. The American Society of Hematology 43rd Annual Meeting and Exposition, Orlando, FL, December 7-11, 2001. Blood, 98(11):545a (Abstract #2287), 2001.

480.A Greenberger JS, Defilippi SJ, Jefferson M, Gretton JE, Epperly MW. Involvement of the pulmonary vasculature in development of irradiation lung fibrosis. The American Society of Hematology 43rd Annual Meeting and Exposition, Orlando, FL, December 7-11, 2001. Blood, 98(11):384a (Abstract #1617), 2001.

481.A Chang J, Epperly MW, Greenberger JS. Increased survival of cyropreserved hematopoietic cells by overexpression of manganese Superoxide dismutase (MnSOD) which decreases production of reactive oxygen species (ROS during thawing. The American Society of Hematology 43rd Annual Meeting and Exposition, Orlando, FL, December 7-11, 2001. Blood, 98(11):182a (Abstract #766), 2001.

482.A Goff JP, Shields DS, Hanley KA, Gooding W, Greenberger JS. Cell fate decisions of individual daughter cells of the first doubling of human cord blood CD34+Thy-1+Lin- stem cell candidates are independent and do not affect lymphomyelopoiesis capacity. The American Society of Hematology 43rd Annual Meeting and Exposition, Orlando, FL, December 7-11, 2001. Blood, 98(11):274a (Abstract #1153), 2001.

483.A Blumberg D, Epperly MW, Guo HL, Wolfe D, Liu K, Billiar T, Glorioso J, Greenberger JS. Overexpression of manganese Superoxide dismutase (MnSOD) protects against murine intestinal damage induced by total body irradiation (TBI). Society of University Surgeons 63rd Annual Meeting, Honolulu, Hawaii, February 14-16, 2002.

484.A Epperly MW, Guo HL, Jefferson M, Gretton JE, Greenberger JS. Pathogenesis of irradiation-induced lung fibrosis. The 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, CA, April 6-10, 2002. Proc. AACR Vol. 43, March, 2002, Abstract #660, p. 131.

485.A Guo HL, Seixas-Silva, Jr. J, Gretton J, Epperly MW, Shin D, Greenberger JS. Manganese Superoxide dismutase-plasmid/liposome (MnSOD-PL) complex prevents mucositis of the oral cavity without protecting head and neck tumor xenografts. The 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, CA, April 6-10, 2002. Proc. AACR Vol. 43, March, 2002, Abstract #661, p. 132.

486.A Greenberger JS, Guo HL, Chang J, Gretton JE, Epperly MW. Esophageal stem cell (ESC) involvement in protection of the esophagus from irradiation damage. The 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, CA, April 6-10, 2002. Proc. AACR, Vol. 43, March, 2002, Abstract #3392, p. 607.

487.A Greenberger JS. MnSOD-PL gene therapy for prevention of irradiation-induced organ-specific injury. The 49th Radiation Research Society Annual Scientific Meeting. Reno Nevada, April 20-24, 2002, p. 26.

488.A Greenberger JS. Gene transfer systems: In approaches toward understanding radiation resistance and radiosensitization. The 49th Radiation Research Society Annual Scientific Meeting. Reno Nevada, April 20-24, 2002, p. 26.

489.A Guo HL, Seixas-Silva, Jr. J, Epperly MW, Gretton JE, Shin D, Greenberger JS. Manganese Superoxide dismutas-plasmid/liposome (MnSOD-PL) complex protects the oral cavity from irradiation-induced mucositis. The 49th Radiation Research Society Annual Scientific Meeting. Reno Nevada, April 20-24, 2002, p. 116. # p.12-110.

490.A Epperly MW, Gretton JE, Jefferson M, Bernarding M, Greenberger JS. Localization of Superoxide dismutase to the mitochondria is required for radioprotection of cells *in vitro*. The 49th Radiation Research Society Annual Scientific Meeting. Reno Nevada, April 20-24, 2002, p. 116. # p. 12-111.

491.A Osipov AN, Martin I, Borisenko GG, Epperly MW, Greenberger JS, Kagan VE. Ascorbate as a "redox-sensor" and protector against gamma-irradiation-induced oxidative stress: EPR evidence in 32D cl 3 and MnSOD-transfected 32D 2C6 cells. The 49th Radiation Research Society Annual Scientific Meeting. Reno Nevada, April 20-24, 2002, p. 143. # p. 21-223.

492.A Greenberger JS. Organ specific radiation protection using MnSOD-plasmid/liposome gene therapy. AACR (04/02), p. 26, 2002.

493.A 493.A Seixas-Silva J, Guo H, Epperly MW, Gretton JE, Shin DM, Greenberger JS. Title: Manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) complex prevents irradiation-induced mucositis of the oral cavity. ASGT, Boston (06/02), No. 830, p. 5272, Molecular Therapy, Vol. 5, No. 5, 2002.

494.A 494.A Guo H, Wolfe DP, Huang S, Epperly MW, Greenberger JS, Glorioso J, Blumberg D. Title: Herpes simplex virus containing the human manganese superoxide dismutase transgene (HSV-MnSOD)

protects the intestine from irradiation damage. ASGT, Boston (06/02), p. 5272, No. 831, Molecular Therapy, Vol. 5, No. 5, 2002.

495.A Goff JP, Shields DS, Wechuck JB, Wolfe D, Huang S, Hanley KA, Goins WF, Epperly MW, Glorioso J, Greenberger JS. Title: Gene transfer of MnSOD to CD34+Thy-1+lin- human cord blood cells using herpes simplex virus type 1 vectors. ASGT, Boston (06/02), p. 5407, No. 1249, Molecular Therapy, Vol. 5, No. 5, 2002.

496.A Epperly MW, Greenberger JS, Guo HL, Gretton JE, Jefferson M. Title: Protection of pulmonary endothelial cells from irradiation by overexpression of manganese superoxide dismutase-plasmid/liposome complexes. 31st. Annual Meeting International Society for Experimental Hematology, Montreal, Canada, July 5 – 9, 2002, Exp. Hematol. Vol. 30 (2002) 37 + 46, No. 6, Suppl. #1, # 193, p. 85, 2002.

497.A Epperly MW, Greenberger JS, Gretton JE, Jefferson M, Bernarding M. Title: The importance of mitochondrial localization for the prevention irradiation-induced apoptosis by manganese superoxide dismutase. 31st. Annual Meeting International Society for Experimental Hematology, Montreal, Canada, July 5 – 9, 2002, Exp. Hematol. Vol. 30, No. 6, Suppl. #1, p. 52, # 63, 2002.

498.A Epperly MW, Guo HL, Greenberger JS. Title: Bone marrow cells contribute to irradiation-induced pulmonary fibrosis. 31st. Annual Meeting International Society for Experimental Hematology, Montreal, Canada, July 5 – 9, 2002, Exp. Hematol. Vol. 30, No. 6, Suppl. #1, p. 101, # 258, 2002.

499.A Goff JP, Shields DS, Wechuck JB, Wolfe D, Huang S, Hanley KA, Goins WF, Epperly MW, Glorioso J, Greenberger JS. Title: MnSOD gene transfer to CD34+Thy-1+lin- human cord blood cells using herpes simplex virus type 1 vectors. 31st. Annual Meeting International Society for Experimental Hematology, Montreal, Canada, July 5 – 9, 2002, Exp. Hematol. Vol. 30, No. 6, Suppl. #1, p. 68, # 127, 2002.

500.A Kagan V, Epperly MW, Jefferson M, Bernarding M, Greenberger JS. Title: In vitro and in vivo detection of irradiation-induced free radicals. ASTRO, IJROBP #82, P. 50, Vol. 54, No. 2, Suppl., 2002.

501.A Greenberger JS, Nie S, Jefferson M, Bernarding M, Gretton JE, Guo HL, Bar-Sagi D, Archer H, Epperly MW. Title: Time course of increased manganese superoxide dismutase (MnSOD) biochemical activity and C types specific expression in lungs of C57BL/6J mice intratracheally injected with MnSOD plasmid/liposome complex (MnSOD-PL). ASTRO, IJROBP, #2008, Vol. 54, p. 217, No. 2 Suppl., 2002.

502.A Epperly MW, Jefferson M, Guo HL, Gretton JE, Bernarding M, Greenberger JS. Title: Pre-but not post irradiation intratracheal injection of manganese superoxide dismutase-plasmid/liposomes (MnSOD-PL) protects the lung from irradiation damage. ASTRO, IJROBP, #129, Vol. 54, p. 77, No. 2 Suppl., 2002.

503.A Goff JP, Hanley KA, Shields DS, Wechuck JB, Wolfe D, Epperly MW, Greenberger JS. Title: Gene transfer of MnSOD to CD34+ and CD34+Thy-1+lin- human cord blood cells using a herpes simplex virus vector. Proc. AACR, Vol. 43, March, 2002, Abstract #2944, p. 594.

504.A Greenberger JS. Title: MnSOD plasmid liposome gene therapy for prevention of irradiation induced organ specific injury. Proc. AACR 93rd Annual Mtg., San Francisco, California, April, 2002, Extended Abstracts p. 23, 2002.

505.A Greenberger JS, Goff J, Shields D, Glowacki J. Title: Optimization of growth of single bone marrow stromal cell precursors of osteoblasts by extracellular matrix coated surfaces. 2002 Materials Research Society's 2002 Fall Meeting, December 2 – 6, 2002. MRS Program, p. 241, # AA 8.16, 2002.

506.A Greenberger JS, Gretton J, Jefferson M, Guo HL, Epperly MW. Title: Cell phenotype specific differential kinetics of expression of intratracheal delivered MnSOD-plasmid liposome gene therapy for pulmonary radiation protection. Frontiers in Cancer Prevention Research, Boston, Massachusetts, October 14 – 18, 2002, Proc. AACR Meeting, Abstract #B105, p. 105, 2002.

507.A Greenberger JS, Gretton J, Jefferson M, Bernarding M, Epperly MW. Title: Cellular pathophysiology of ionizing irradiation induced organizing alveolitis/fibrosis. A.S.C.B. 42nd. Annual Meeting, San Francisco, California, December 14 – 18, 2002, 12/03. Molecular Biology of the Cell, Vol. 13, Supplement, p. 13a, #70, 2002.

508.A Greenberger J, Jefferson M, Gretton J, Bernarding M, Epperly M. Protection of normal tissues from ionizing irradiation damage by MnSOD-plasmid liposome gene therapy. Advances In Translational Radiation Oncology: From Molecular Signals to Cancer Care, Lugano, Switzerland, March 16, 2003 – March 19, 2003.

509.A Epperly MW, Shen H, Jefferson M, Bernarding M, Greenberger JS. Title: Injection of esophageal stem cells following irradiation of the esophagus prevents irradiation-induced esophagitis and prolongs survival in a mouse model. ASH, Philadelphia, PA, December, 2002. Blood, Vol. 100, No. 11, p. 1536, #4100, 2002.

510.A Epperly MW, Guo HL, Jefferson M, Gretton JE, Bernarding M, Greenberger JS. Title: Bone marrow involvement in the development of irradiation-induced fibrosis of the lung. ASH, Philadelphia, PA, December, 2002. Blood, Vol. 100, No. 11, p. 730a, #2881, 2002.

511.A Guo HL, Seixas-Silva JA, Epperly MW, Gretton JE, Shin, DM, Bar-Sagi D, Archer H, Greenberger JS. Title: Decrease in irradiation-induced oral cavity mucositis by plasmid/liposome delivery of the human manganese superoxide dismutase (MnSOD) transgene. ASH, Philadelphia, PA, December, 2002. Blood, Vol. 100, No. 11, p. 656a, #2580, 2002.

512.A Goff JP, Shields DS, Greenberger JS, Glowacki J. Title: Age-related differences in the capacity of human bone marrow STRO-1+ cells to differentiate to osteoblasts. ASH, Philadelphia, PA, December, 2002. Blood, Vol. 100, No. 11, p. 185b, #4242, 2002.

513.A Goff JP, Shields DS, Wechuck JB, Huang S, Wolfe D, Epperly MW, Glorioso JC, Greenberger JS. Title: Use of herpes simplex virus type 1 vectors for MnSOD gene transfer to CD34+Thy-1+lin- human cord blood cells. Blood, Vol. 100, No. 11, p. 486b, #5529, 2002.

514.A Greenberger JS, Guo HL, Jefferson M, Gretton J, Bernarding M, Epperly MW. Title: Irradiation-induced fibrosis of the lung is prevented by both pre- and post-irradiation intratracheal injection of manganese superoxide dismutase-plasmid/liposome (MNSOD-PL). AACR, Toronto, Ontario, Canada, April 5 – 9, 2003. Proceedings 94th Annual Meeting, Vol. 44, p. 1408, #6142, March, 2003.

515.A Goff JP, Shields DS, Greenberger JS, Glowacki J. Title: Age-specific changes in the capacity of bone marrow STRO-1+ cells to differentiate to osteoblasts. Proceedings of the American Association for Cancer Research, 94th Annual Meeting, Vol. 44, p. 990, #4325, March, 2003.

516.A Epperly MW, Jefferson M, Bernarding M, Guo HL, Gretton J, Cheng J, Chen M, Greenberger JS. Title: Isolation of esophageal stem cells from the esophagus or bone marrow. AACR, Toronto, Ontario, Canada, April 5 – 9, 2003. Proceedings 94th Annual Meeting, Vol. 44, p. 988, #4320, March, 2003.

517.A Guo HL, Epperly MW, Greenberger JS. Title: Increased expression of the MnSOD transgene in murine lungs at the time of late fibrosis associated increased irradiation-induced cytokine expression improves survival. ASGT, June, 2003. Radiation Therapy, Vol. 7, No. 5, p. 5129, #329, 2003.

518.A Epperly MW, Guo HL, Greenberger JS. Title: Increased adhesion molecule expression precedes irradiation-induced fibrosis. ASGT, June, 2003. Radiation Therapy, Vol. 7, No. 5, p. 5309, #801, 2003.

519.A Perry Y, Epperly MW, Greenberger JS, Luketich JD. Title: Development of PDT-induced esophageal stricture is decreased by therapeutic local overexpression of the MnSOD transgene. ASGT, June, 2003. Radiation Therapy, Vol. 7, No. 5, p. 5438, #1135, 2003.

520.A Epperly MW, Guo HL, Greenberger JS. Title: Increased productivity of long-term bone marrow cultures from E-Selectin knockout mice compared to L-Selectin, VCAM or ICAM knockout mice. ISEH, July, 2003. Experimental Hematology, 31:61-237, p # 63, 2003.

521.A Epperly MW, Jefferson M, Chang J, Chen M, Greenberger JS. Title: Regeneration of the esophagus by esophageal and hematopoietic stem cells. ISEH, July, 2003. Experimental Hematology, 31:61-237, p # 192, 2003.

522.A Guo HL, Epperly MW, Greenberger JS. Title: RRS-Delayed administration of MnSOD-PL following irradiation results in increased survival of irradiated mice. RRS, June, 2003.

523.A Greenberger JS, Guo HL, Epperly MW. Title: RRS-Absence of L-Selectin results in increased survival following pulmonary irradiation. RRS, June, 2003.

524.A Epperly MW, Perry Y, Luketich JD, Greenberger JS. Title: RRS-Prevention of PDT-induced esophageal stricture by MnSOD-PL gene therapy. RRS, June, 2003.

525.A Greenberger JS, Guo HL, Epperly MW. Title: Role of adhesion molecules in irradiation-induced organizing alveolitis/fibrosis in C57BL/6J mice. ASTRO, September, 2003. IJROBP, Vol. 57, No. 2, p. 5157, #57, 2003.

526.A Epperly MW, Guo HL, Greenberger JS. Title: Intratracheal administration of Manganese Superoxide Dismutase-Plasmid/Liposomes following irradiation provides protection from lung irradiation damage. ASTRO, September, 2003. IJROBP, Vol. 57, No. 2, p. 5518, #58, 2003.

527.A Guo HL, Epperly MW, Liggitt D, Koe G, Greenberger JS. Title: Inhalation of freeze-dried Manganese Superoxide Dismutase-Plasmid/Liposome produces detectable transgene product expression in the lungs of C57BL/6J mice. ASTRO, September, 2003. Vol. %, No. 2, Suppl. P. 5752, #2013, 2003.

528.A Greenberger JS, Guo H, Nie S, Zhang X, Epperly MW. Title: Mitochondrial localization of Superoxide Dismutase transgene product is required for conferral of ionizing irradiation resistance. The American Society for Cell Biology 43rd Annual Meeting, Moscone Convention Center, San Francisco, CA, December 13 – 17, 2003. Molecular Biology of the Cell, Vol. 14, Nov., 2003, p. 420a, #2350.

529.A Epperly MW, Osipov AN, Martin I, Kawai KK, Barisenko GB, Jefferson M, Bernarding M, Greenberger JS, Kagan VE. Title: MnSOD protection of 32D cl 3 hematopoietic cells against irradiation-induced oxidative stress: Role of ascorbate and Thiols. SPORE Investigator's Meeting, Bethesda, Maryland, July, 2003.

530.A Wechuck JB, Wolfe DP, Goins WF, Wendell SK, Bai Q, Huang S, Goff JP, Greenberger JS, Ataai MM, Glorioso JC. Title: Herpes simplex virus type 1 (HSV-1) gene transfer to human $CD34^+$ cord blood cells expressing the viral receptors HveA and HveC. Molecular Therapy, 7(5):366, #953, 2003.

531.A Greenberger JS, Shen H, Zhang X, Carpenter M, Epperly MW. Title: Protection of esophageal stem cells from irradiation damage by overexpression of manganese superoxide dismutase (MnSOD). ASH, December, 2003. Blood, Vol. 102(11), Nov. 16, 2003, #4296, p. 147b.

532.A Epperly MW, Carpenter M, Guo H, Greenberger JS. Title: Pulmonary ionizing radiation protection by inhalation delivery of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL). ASH, December, 2003. Blood, Vol. 102(11), Nov. 16, 2003, #5716, p. 210b.

533.A Epperly MW, Nie S, Zhang X, Hsu A, Greenberger JS. Title: Overexpression of MnSOD in 32D cl 3 murine hematopoietic progenitor cells increases overall antioxidant activity. ASH, December, 2003. Blood, Vol. 102(11), Nov. 16, 2003, #4411, p. 174b.

534.A Epperly M, Perry Y, Greenberger J, Luketich J. Title: Therapeutic local overexpression of the manganese superoxide dismutase (MnSOD) – transgene prevents photodynamic therapy damage to normal esophageal mucosa. In: Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy, part of the International Symposium on Biomedical Optics 2004, 24 – 29 January 2004 in San Jose, California, USA.

535.A Carpenter M, Agarwal A, Nie S, Hricisak L, Epperly MW, Greenberger JS. Title: Inhalation delivery of manganese superoxide dismutase-plasmid/liposomes (MnSOD-PL) to the mouse lung for fractionated radioprotection. AACR, 2004.

536.A Epperly MW, Perry Y, Luketich JD, Greenberger JS. Title: Prevention of PDT-induced porcine esophageal stricture by overexpression of manganese superoxide dismutase (MnSOD). AACR, 2004.

537.A Greenberger JS, Nie S, Hsu A, Zhang X, Epperly MW. Title: Increased antioxidant pool size in subclonal lines of 32D cl 3 overexpressing MnSOD protects cells from ionizing irradiation. AACR, 2004.

538.A Kagan VE, Tyurin VA, Tyurina YY, Amoscato AA, Kanai AJ, Peterson J, Epperly MW, Greenberger J. Title: Redox enhancement of tumor cell sensitivity to apoptosis: radiation-induced oxidation of cardiolipin. Lung Spore Meeting, 2004.

539.A Epperly MW, Kagan VE, Tyurin VA, Tyurina YY, Amoscato AA, Kanai AJ, Peterson J, Greenberger J. Title: Reduction in nNOS activity decrease the magnitude of cardiolipin modification following irradiation. Radiation Research Society (RRS), St. Louis, MO, July, 2004.

540.A Carpenter M, Agarwal A, Nie S, Hricisak L, Epperly MW, Greenberger JS. Title: Inhalation delivery of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) complexes to mouse lung protects against irradiation-induced organizing alveolitis. Radiation Research Society (RRS), St. Louis, MO, July, 2004.

541.A Epperly M, Birder L, Meyers S, Greenberger J, Kanai A. Title: Inhibition/absence of mitochondrial nitric oxide synthase protects the bladder urothelium against radiation damage. Radiation Research Society (RRS), St. Louis, MO, July, 2004.

542.A Agarwal A, Epperly MW, Perry Y, Luketich JD, Greenberger JS. Title: Prevention of photodynamic therapy (PDT)-induced porcine esophageal stricture by overexpression of manganese superoxide dismutase (MnSOD). Radiation Research Society (RRS), St. Louis, MO, July, 2004.

543.A Niu YY, Epperly MW, Shen H, Greenberger JS. Title: Prevention of irradiation-induced esophagitis by injection of cells from the bone marrow or esophagus. Radiation Research Society (RRS), St. Louis, MO, July, 2004.

544.A Glowacki J, Mueller SM, Greenberger JS, Bleiberg I, LeBoff MS. Title: Effects of 1,25-Dihydroxyvitamin $D_3$ and 25-Hydroxyvitamin $D_3$ on osteoblast differentiation in human marrow stromal cell cultures. Advances in skeletal anabolic agents for the treatment of osteoporosis. Bethesda, Maryland, May 24-25, 2004.

545.A Greenberger JS, Kanai AJ, Kagan VE, Epperly MW. Title: Overexpression of manganese superoxide dismutase (MnSOD) results in increased overall antioxidant levels and decrease in reactive oxygen species (ROS) following irradiation. ISEH, 2004. Experimental Hematology, Vol. 32, 2004, Abstract #43, pg. 41.

546.A Epperly Michael W, Cao Shaonan, Shields Donna, Greenberger Joel S. Title: Altered bone marrow stromal cell microenvironment in long term bone marrow cultures (LTBMCs) from manganese superoxide dismutase (MnSOD) and SMAD 3 knockout mice. ISEH, New Orleans, August, 2004. Experimental Hematology, Vol. 32, 2004, Abstract #174, pg. 73.

547.A Niu Yun Yun, Epperly Michael W, Shen Hongmei, Greenberger Joel S. Title: Side population cells from the bone marrow or esophagus prevent irradiation-induced esophagitis. ISEH, New Orleans, August, 2004. Experimental Hematology, Vol. 32, 2004, Abstract #44, pg. 42.

548.A Carpenter Matthew, Agarwal Anurag, Epperly Michael W, Nie Suhua, Hricisak Lauren, Greenberger Joel S. Title: Inhalation delivery of Hemagglutinin epitope-tagged manganese superoxide dismutase-plasmid/liposome (HA-MnSOD-PL) complexes to the lung protects against fractionated irradiation lung damage. ASTRO, Atlanta, GA, October, 2004. IJROBP, Vol. 60, No. 1, Suppl. p. S172, #71, 2004.

549.A Greenberger Joel S, Bahary Nathan, Epperly Michael W. Title: Development of irradiation-induced muscle fibrosis in the zebrafish. ASTRO, Atlanta, GA, October, 2004. IJROBP, Vol. 60, No. 1, Suppl. p. 5376, #2067, 2004.

550.A Niu Yun Yun, Epperly Michael W, Zhang Xichen, Carpenter Matthew, Greenberger Joel S. Title: Prevention of irradiation-induced esophagitis by injections of bone marrow or esophageal stem cells. ASTRO, Atlanta, GA, October, 2004. IJROBP, Vol. 60, No. 1, Suppl. p. S176, #77, 2004.

551.A Agarwal Anurag, Perry Yaron, Epperly Michael W, Luketich James D, Greenberger Joel S. Title: Prevention of photodynamic therapy (PDT)-induced esophageal stricture by overexpression of manganese superoxide dismutase (MnSOD). ASTRO, Atlanta, GA, October, 2004. IJROBP, Vol. 60, No. 1, Suppl. p. S355, #2028, 2004.

552.A Greenberger Joel S, Carpenter Matthew, Agarwal Anurag, Nie Suhua, Hricisak Lauren, Epperly Michael W. Title: Prevention of irradiation-induced organizing alveolitis by inhalation delivery of manganese superoxide dismutase-plasmid liposome (MnSOD-PL) complexes to mouse lung. Lung SPORE Investigational Meeting, Washington, DC, July, 2004.

553.A Zhou Shuanhu, Cao Shaonon, Greenberger Joel, Epperly Michael, Lechpammer Stanislav, Glowacki Julie. Title: Role of Smad3 in TGF-β's inhibition of adipocyte differentiation of marrow stromal cells. ASBMR, 2004. JBMR, Vol. 19, Suppl. #1, p. S253, #SU203, 2004.

554.A Zhou S, Lechpammer S, Greenberger J, Glowacki J. Title: Hypoxia inhibition of adipogenesis in human bone marrow stromal cells requires TGFβ/Smad signaling. ASBMR, 2004. JBMR, Vol. 19, Suppl. #1, p. 571, #F168, 2004.

555.A Epperly Michael W, Greenberger Joel, Bahary Nathan. Title: Modeling radiation fibrosis in the zebrafish. 7F Conference, July, 2004.

556.A Title: "Rodent Models Organ and Tissue Specific Radiation Protection With MnSOD" for the Animal Models of Radiation Injury, Protection, and Therapy Workshop, May 25, 2004, Residence Inn Bethesda Downtown, 7335 Wisconsin Avenue, Bethesda, Maryland.

557.A Greenberger JS. Title: "Bone Marrow Origin of Myofibroblasts in Irradiation Lung and Esophagus Fibrosis". Lent V Conference, Rochester, NY, 5/19 – 5/21/04.

558.A Cao Shaonan, Zhou Shuanhu, Epperly Michael W, Glowacki Julie, Shields Donna, Greenberger Joel S. Increased adipocytogenesis and hematopoiesis in long-term bone marrow cultures from SMAD3-/- mice. ASH, San Diego, California, 12/4 – 7/04. Blood, 104, No. 11, Part 1, p. 366a, #1298, 2004.

559.A Epperly Michael W, Lechpammer Stanislav, Nie Shuha, Glowacki Julie, Greenberger Joel S. Adipocyte differentiation of SOD2-/- mouse bone marrow stromal cells is associated with decreased antioxidant reserves and is reversed by the antioxidant WR2721 (Amifostine). ASH, San Diego, California, 12/04. Blood, 104, No. 11, Part 1, p. 644a, #2342, 2004.

560.A Shen Hongmei, Niu Yun Yun, Epperly Michael W, Greenberger Joel S. Decreased irradiation-induced apoptosis in murine hematopoietic side population cells compared to non-side population cells. ASH, San Diego, California, 12/04. Blood, 104, No. 11, Part 2, p. 1466, #4241, 2004.

561.A Epperly Michael W, Bahary Nathan, Greenberger Joel S. Increased antioxidant expression prevents irradiation-induced fibrosis in the Zebrafish muscle. AACR, 3/05.

562.A Niu Yunyun, Stabile Laura, Zhang Xichen, Epperly Michael W, Siegfried Jill, Greenberger Joel S. Transfection of orthotopic lung tumors or tumor cells with c-Met antisense plasmid/liposome complexes increases irradiation sensitivity. AACR, 3/05.

563.A Wegner Rodney, Nie Suhua, Zhang Xichen, Epperly Michael W, Greenberger Joel S. Increased expression of manganese superoxide dismutase (MnSOD) preserves antioxidant levels in irradiated normal tissue but not tumor cells. AACR, 3/05.

564.A Epperly Michael W, Nie Suhua, Zhang Xichen, Greenberger Joel S. Increased antioxidant levels following MnSOD-PL transfection results in increased radioprotection of normal tissue but not tumor cells. ASGT, 2005.

565.A Niu Yunyun, Stabile Laura, Epperly Michael W, Siegfried Jill, Greenberger Joel S. C-Met antisense plasmid liposome complex increases radiation sensitivity of lung tumor cells in vivo or in vitro. ASGT, 2005.

566.A Epperly Michael W, Zhang Xichen, Hricisak Lauren, Cao Shaonan, Greenberger Joel S. Smad3-/- bone marrow stromal cells are radioresistant. ISEH, 7/29 – 8/2/05. Experimental Hematology, 33(7):Suppl. 1:114, #291, 2005.

567.A Niu Yunyun, Shen Hongmei, Epperly Michael W, Greenberger Joel S. Side population (SP) cells isolated from bone marrow or esophagus are radiation resistant. ISEH, 7/29 – 8/2/05. Experimental Hematology, 33(7):Suppl. 1:116, #299, 2005.

568.A Glowacki Julie, Lechpammer Stanislav, Epperly Michael W, Zhou Shuanhu, Nie Suhua, Greenberger Joel S. Regulation of adipocyte differentiation in mouse marrow stromal cells by level of antioxidant reserves. ISEH, 7/29 – 8/2/05. Experimental Hematology, 33(7):Suppl. 1:87, #188, 2005.

569.A Epperly Michael W, Fink Mitchell P, Hricisak Lauren, Zhang Xichen, Greenberger Joel S. Novel small molecule radioprotective agents. ISEH, 7/29 – 8/2/05. Experimental Hematology, 33(7):Suppl. 1:115, #296, 2005.

570.A Greenberger Joel S, Zhang Xichen, Hricisak Lauren, Epperly Michael W. Mice chimeric for Smad3-/- bone marrow stromal cells demonstrate decreased irradiation lung fibrosis. ISEH, 7/29 – 8/2/05. Experimental Hematology, 33(7):Suppl. 1:114, #290, 2005.

571.A Epperly Michael W, Niu Yunyun, Hricisak Lauren, Greenberger Joel S. Inhibition of macrophage migration to the lungs decreases irradiation pulmonary fibrosis. ISEH, 7/29 – 8/2/05. Experimental Hematology, 33(7):Suppl. 1:114, #252, 2005.

572.A Greenberger Joel. Stem cells in radiation biology. Radiation Research Society, Denver, Colorado, 10/15 – 10/19/05.

573.A Epperly Michael W, Zhang Xichen, Hricisak Lauren, Cao Shaonan, Greenberger Joel S. Absence of the Smad3 gene product increases radation resistance of bone marrow stromal cells. Radiation Research, Denver, Colorado, 10/15 – 10/19/05.

574.A Epperly Michael W, Fink Mitchell, Hricisak Lauren, Zhang Xichen, Greenberger Joel S. Incubation of 32D cl 3 factor-dependent hematopoietic cells in ethyl Pyruvate (EP) increases radiation resistance. Radiation Research, Denver, Colorado, 10/15 – 10/19/05.

575.A Bahary Nathan, Epperly Michael W, Quadar Mubina, Greenberger Joel S. Small molecule antioxidants prevent ionizing irradiation induced fibrosis in the adult Zebrafish. Radiation Research, Denver, Colorado, 10/15 – 10/19/05.

576.A Greenberger Joel S, Hricisak Lauren, Epperly Michael W. In a model of irradiation retreatment of the lung (simulating radiotherapy for lung cancer local recurrence), normal lung tolerance is increased by administration of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL). ASTRO, Denver, Colorado, 10/15 – 10/19/05. #2414, IJROBP, Vol. 68, No. 1, Suppl. #2, p. S475, 2005.

577.A Epperly Michael W, Liggitt Dennis, Greenberger Joel S. Systemic intravenous (IV) as well as local administration of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) displays no detectable toxicity while offering protection from irradiation-induced damage. ASTRO, Denver, Colorado, 10/15 – 10/19/05. #2435, IJROBP, Vol. 68, No. 1, Suppl. #2, p. S487, 2005.

578.A Epperly Michael W, Kanai Anthony, Greenberger Joel S. Intravenous injection of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) alters irradiation-induced production of reactive oxygen species (ROS) differently in normal mouse oral mucosa compared to orthotopic tumors. ASTRO, Denver, Colorado, 10/15 – 10/19/05.

579.A Niu Yunyun, Epperly Michael W, Carlos Timothy, Zhang Xichen, Greenberger Joel S. Role of bone marrow derived macrophages and stromal cells in irradiation-induced pulmonary fibrosis. ASTRO, Denver, Colorado, 10/15 – 10/19/05. IJROBP, Vol. 63, No. 2, Suppl. #1, p. S470, 2005.

580.A Glowacki J, Mueller S M, Greenberger J S, Bleiberg I, LeBoff M S. Effects of 1,25-Dihydroxyvitamin $D_3$ on osteoblast differentiation in human marrow stromal cell cultures. ASBMR (2005). JBMR, Vol. 20, Suppl. #1, p. 5351, 2005.

581.A Niu Yunyun, Kanai Anthony J, Wipf Peter, Zhang Xichen, Greenberger Emily E, Franicola Darcy, Epperly Michael W, Kagan Valerian E, Fink Mitchell P, Greenberger Joel S. Development of new small molecule bone marrow radioprotectors. 47$^{th}$ Annual ASH, Atlanta, GA, 12/3 – 12/6/05. Blood, Vol. 106, No. 11, p. 1296, #419b, Nov. 16, 2005.

582.A Epperly Michael W, Cao Shaonan, Zhang Xichen, Greenberger Emily E, Goff Julie, Wang Hong, Bahnson Al, Shields Donna, Franicola Darcy, Greenberger Joel S. Expression of the Smad3 transgene restores

radiosensitivity and migratory capacity to a Smad3-/- clonal bone marrow stromal cell line. 47th Annual ASH, Atlanta, GA, 12/3 – 12/6/05. Blood, Vol. 106, No. 11, p. 157b, #4307, 2005.

583.A Cao Shaonan, Greenberger Emily E, Epperly Michael W, Kanai Anthony J, Greenberger Joel S. Absence of nNOS increases longevity of long term bone marrow cultures and radiation resistance. 47th Annual ASH, Atlanta, GA, 12/3 – 12/6/05. Blood, Vol. 106, No. 11, p. 130b, #4197, 2005.

584.A Greenberger Joel S, Niu Yunyun, Zhang Xichen, Cao Shaonan, Carlos Timothy, Epperly Michael W. Two cellular components of bone marrow origin contribute to pulmonary irradiation fibrosis. 47th Annual ASH, Atlanta, GA, 12/3 – 12/6/05. Blood, Vol. 106, No. 11, p. 405a, #1401, 2005.

585.A Greenberger Emily E, Epperly Michael W, Franicola Darcy, Zhang Xichen, Jacobs Samuel, Greenberger Joel S. Thalidomide Sensitizes 32D cl 3 hematopoietic progenitor cells to ionizing irradiation. 47th Annual ASH, Atlanta, GA, 12/3 – 12/6/05. Blood, Vol. 106, No. 11, p. 368b, #5139, 2005.

586.A Zhou S, Mueller SM, Amato I, Adler C, Epperly MW, Greenberger JS, Glowacki J. Age-related intrinsic changes in human marrow stromal cells and their differentiation to osteoblasts. Orthopedic Research Society, Atlanta, GA, 3/5 – 3/8/06 (submitted).

587.A Niu Yunyun, Epperly Michael W, Kagan Valerian E, Greenberger Joel S. Increased expression of MnSOD in the esophagus increases engraftment of bone marrow origin stem cells following irradiation. AACR, 4/06.

588.A Epperly Michael W, Kagan Valerian E, Kanai Anthony J, Wipf Peter, Amoscato Andrew A, Greenberger Joel S. Development of small molecule mitochondria-targeted antioxidants for radioprotection. AACR, 4/06.

589.A Greenberger Emily E, Epperly Michael W, Franicola Darcy, Zhang Xichen, Jacobs Samuel, Greenberger Joel S. Hematopoietic progenitor cell line 32D cl 3 and squamous cancer cell line SCC-VII are sensitized to ionizing irradiation by thalidomide. AACR, 4/06.

590.A Greenberger Joel S, Cao Shaonan, Zhang Xichen, Greenberger Emily E, Goff Julie P, Wang Hong, Bahnson Al, Shields Donna, Franicola Darcy, Epperly Michael W. The Smad3 transgene product restores radiosensitivity and migratory capacity to Smad3-/- clonal bone marrow stromal cell lines. AFIP, San Francisco, CA, 3/31 – 4/4/06. FASEBJ, Vol. 20, No. 5, PA1328, No. 830.7, 2006.

591.A Grace MB, Germana A, Amundson SA, Fu D, Jackson WE, Miller AC, Greenberger JS, Epperly MW, Fornace AJ, Ledney GD, Blakely WF. Quantitative expression of p53 and STAT3 dependent genes in relevant models for biodosimetry applications. Biodos/EPR Conference, Bethesda, Maryland, July, 2006.

592.A Epperly Michael W, Nie Suhua, Kanai Anthony, Greenberger Joel S. Manganese superoxide dismutase-plasmid liposome (MnSOD-PL) transgenic effects on irradiation-induced reactive oxygen species (ROS) in normal tissue also destabilize antioxidant pools in orthotopic oral cavity tumors. ASGT, 2006.

593.A Epperly Michael W, Niu Yunyun, Greenberger Joel S. Intravenous (I.V.) administration of manganese superoxide dismutase-plasmid liposome (MnSOD-PL) complex protects mice from whole body irradiation. ASGT, 2006.

594.A Greenberger Joel S, Niu Yunyun, Epperly Michael W. In a model of irradiation retreatment of the murine lung, gene therapy with manganese superoxide dismutase-plasmid liposome (MnSOD-PL) increases with lung tolerance. ASGT, 2006.

595.A Niu Yunyun, Epperly Michael W, Greenberger Joel S. Pretreatment of the esophagus with manganese superoxide dismutase-plasmid liposome (MnSOD-PL) complex increases migration and proliferation of marrow stem cell progenitors of esophageal squamous epithelium. ASGT, 2006.

596.A Epperly Michael W, Cao Shaonan, Zhang Xichen, Niu Yunyun, Greenberger Joel S. Mitochondrial/neuronal nitric oxide synthase (NOS1) homologous recombinant negative (-/-) mouse hematopoietic progenitor cells are radioresistant and age resistant in Long Term Marrow Culture. Radiation Research, Philadelphia, PA, 11/06. p. 85, #PS-127, 2006.

597.A Epperly Michael W, Wipf Peter, Franicola Darcy, Amoscato Andrew, Kagan Valerian, Peterson James, Kanai Anthony, Greenberger Joel S. Peptide linker localization of small molecule NOS inhibitors to the mitochondria induces radiation resistance. Radiation Research, Philadelphia, PA, 11/06. p. 83, #PS-122, 2006.

598.A Fink Mitchell, Epperly Michael W, Niu Yunyun, Franicola Darcy, Greenberger Emily E, Jin ShunQian, Greenberger Joel S. In vivo or in vitro delivery of ethyl pyruvate (EP) is radioprotective and is a radiation damage mitigator. Radiation Research, Philadelphia, PA, 11/06. p. 83, #PS-122, 2006.

599.A Niu Yunyun, Epperly Michael W, Shen Hongmei, Greenberger Joel S. Increased migration and proliferation of marrow-derived stem cell progenitors of esophageal squamous epithelium into the esophagus of irradiated mice pretreated with MnSOD-PL. Radiation Research, Philadelphia, PA, 11/06. p. 89, #PS-142, 2006.

600.A Greenberger Joel S, Epperly Michael W, Nie Suhua, Kanai Anthony. Destabilization of antioxidant pools in orthotopic oral cavity tumors by overexpression of manganese superoxide dismutase-plasmid/liposomes (MnSOD-PL). Radiation Research, Philadelphia, PA, 11/06. p. 85, #PS-127, 2006.

601.A Jiang Jianfei, Belikova Natalia A, Xiao Jingbo, Zhao Qing, Vlasova Irina I, Wipf Peter, Greenberger Joel, Kagan Valerian E. Mitochondria targeting of radioprotectors: hemi-gramicidin S conjugated nitroxides inhibit apoptosis and Cardiolipin oxidation in mouse embryonic cells. Radiation Research Society, 4/06. p. 23, #MS-102, 2006.

602.A Belikova Natalia A, Jiang Jianfei, Tyurina Yulia Y, Zhao Qing, Epperly Michael W, Greenberger Joel, Kagan, Valerian E. Redox catalysis by cytochrome c regulates irradiation induced apoptosis in HeLa cells. Radiation Research Society, 4/06. p. 115, #PS-239, 2006.

603.A Bayir Hulya, Huang Z, Epperly Michael W, Greenberger Joel S, Kagan Valerian E. Nitration of MnSOD as a hallmark of irradiation induced damage. Radiation Research Society, 4/06. p. 78, #PS-093, 2006.

604.A Greenberger Joel S, Niu Yunyun, Zhang Xichen, Franicola Darcy, Epperly Michael W. TGFβ mediates migration and proliferation of bone marrow stromal cells into the lungs of irradiated mice. ASTRO, 2006. IJROBP, 68, #3 Supplement, p. 5551, #2615, 2006.

605.A Nie Suhua, Epperly Michael W, Zhang Xichen, Greenberger Joel S. Inhibition of the epidermal growth factor receptor (EGFR) increases in vitro radiosensitization of SCC-VII squamous cell carcinoma cells. ASTRO, 2006. IJROBP, 68, #3 Supplement, p. 5598, #2700, 2006.

606.A Epperly Michael W, Niu Yunyun, Greenberger Joel S. Intravenous injection of manganese superoxide dismutase plasmid-liposome (MnSOD-PL) complex or MnSOD mimetic EUK-134 protects mice from whole body irradiation (WBI). ASTRO, 2006. IJROBP, 68, #3 Supplement, p. 5571, #2650, 2006.

607.A Greenberger Joel S, Niu Yunyun, Zhang Xichen, Franicola Darcy, Epperly Michael W. An intact TGFβ signal transduction pathway is required for migration and proliferation of bone marrow stromal cells to the irradiated lung. ISEH, 9/06. Exp. Heme., 34(9):46, #44, 2006.

608.A Epperly Michael W, Niu Yunyun, Greenberger Joel S. Intravenous injection of manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) complex protects mice from whole body irradiation (WBI). ISEH, 9/06. Exp. Heme., 34(9):50, #58, 2006.

609.A Cao Shaonan, Epperly Michael W, Zhang Xichen, Niu Yunyun, Greenberger Emily E, Greenberger Joel S. Radioresistance of hematopoietic progenitors and increased longevity of long-term bone marrow cultures (LTBMCs) from mitochondrial /neuronal nitric oxide synthase (NOS1) homologous deletion recombinant negative (-/-) mice. ISEH, 9/06. Exp. Heme., 34(9):83, #186, 2006.

610.A Niu Yunyun, Epperly Michael W, Shen Hongmei, Greenberger Joel S. Marrow-derived stem cell progenitors of esophageal squamous epithelium have increased migration to and proliferation in the manganese superoxide dismutase-plasmid/liposome (MnSOD-PL) pretreated esophagus of irradiated first and second generation recipient mice. ISEH, 9/06. Exp. Heme., 34(9):79, #172, 2006.

611.A Goff JP, Wang H, Bahnson AB, Shields DS, Zhang X, Epperly MW, Greenberger JS. Increased migratory capacity of Lewis Lung Carcinoma cells in response to irradiation. ISEH, 9/06. Exp. Heme., 34(9):78, #167, 2006.

612.A Epperly Michael W, Franicola Darcy, Smith Tracey, Greenberger Joel S. Intravenous injection of manganese superoxide dismutase plasmid/liposome complexes (MnSOD-PL) protects the bone marrow from irradiation damage. ASH, 12/06. Blood, 108(11):465b, #5476, 2006.

613.A Epperly Michael W, Epperly Laura D, Franicola Darcy, Zhang Xicheng, Smith Tracey, Greenberger Joel S. Transfection of bone marrow cells in vitro or in vivo prior to cryopreservation with manganese superoxide dismutase (MnSOD-PL) protects frozen cells from ionizing irradiation. Blood, 108(11):377b, #5151, 2006.

614.A Epperly Michael W, Niu Yunyun, Shen Hongmei, Greenberger Joel S. Plasmid/liposome complexes (MnSOD-PL) before irradiation results in increased migration and proliferation of marrow-derived stem cell progenitors in the esophageal squamous epithelium. ASH, 12/06. Blood, 108(11):466b, #5478, 2006.

615.A Epperly Michael W, Greenberger Joel S, Cao Shaonan, Franicola Darcy, Shen Hongmei, Greenberger Emily E, Epperly Laura D, Zhang Xicheng. Neuronal/mitochondrial nitric oxide synthase homologous deletion recombinant negative mice (nos1-/-) long-term bone marrow cultures (LTBMCs) demonstrate increased longevity and radioresistance of derived cell lines. ASH, 12/06. Blood, 108(11):395a, #1355, 2006.

616.A Glowacki J, Zhou S, LeBoff MS, Mueller SM, Goff J, Greenberger JS. Effects of vitamin D status on osteoblast differentiation in human marrow stromal cell cultures: Preliminary results. ASBMR, 2006.

617.A Zhou S, Kim SW, Hahne J, Mueller SM, LeBoff MS, Greenberger JS, Glowacki J. Stimulation of osteoblast differentiation in human bone marrow stromal cells by dihydroxyvitamin $D_3$ declines with age. ASBMR, 2006.

618.A Zhou S, Mueller SM, Amato I, Adler C, Epperly MW, Greenberger JS, Glowacki J. Age-related intrinsic changes in human marrow stromal cells and their differentiation to osteoblasts. Proceeding ASBMR, M253, p. 5392, 2006.

619.A Greenberger Joel S, Smith Tracy, Schlesselman James, Epperly Michael W. Systemic stable radioprotection by intravenous administration of manganese superoxide dismutase-plasmid liposomes. ASGT, Seattle, Washington, 5/30 – 6/3/07.

620.A Niu Yunyun, Epperly Michael W, Greenberger Joel S. Intraesophageal manganese superoxide dismutase plasmid/liposome (MnSOD-PL) administration before irradiation increases intravenous engraftment of esophageal stem cells. ASGT, Seattle, Washington, 5/30 – 6/3/07.

621.A Zhang Xichen, Epperly Michael W, Kay Mark, Chen Zhi-Ying, Smith Tracy, Franicola Darcy, Greenberger Joel S. Minicircle plasmid containing the human manganese superoxide dismutase (MnSOD) transgene confers radioprotection to cells in vivo. ASGT, Seattle, Washington, 5/30 – 6/3/07.

622.A Epperly Michael W, Melendez Andres, Zhang Xichen, Franicola Darcy, Smith Tracy, Greenberger Joel S. Overexpression of mitochondrial localized (mt)-catalase further increases radioresistance induced by MnSOD overexpression in 32D cl 3 murine hematopoietic progenitor cells. ASGT, Seattle, Washington, 5/30 – 6/3/07.

623.A Greenberger Joel S. Antioxidant gene therapy treatment of the irradiated organ microenvironment enhances stem cell engraftment. 13$^{th}$ International Congress of Radiation Research, San Francisco, CA, 7/8 – 7/12/07.

624.A Goff Julie P., Epperly Michael W, Shields Donna, Smith Tracey, Seki Mineaki, Wittschieben John, Wood Richard D, Greenberger Joel S. Mice with absence of the PolQ polymerase have increased irradiation induced peripheral blood cell micronuclei and show radiosensitization of marrow stromal cells in vitro. ICRR, San Francisco, CA, 7/25/07, p. 222, abstract #P54089, 2007.

625.A Niu Yunyun, Epperly Michael W, Shen Hongmei, Greenberger Joel S. Intraesophageal manganese superoxide dismutase plasmid/liposome (MnSOD-PL) administration before irradiation increases engraftment

of intravenously injected esophageal stem cells. ICRR, San Francisco, CA, 7/25/07, p. 154, abstract #P53030, 2007.

626.A Zhang Xichen, Epperly Michael W, Kay Mark A, Chen Zhi-Ying, Smith Tracy, Franicola Darcy, Greenberger Joel. Minicircle plasmid delivery of the human manganese superoxide dismutase (MnSOD) transgene using a minicircle plasmid confers radioprotection 32D cl 3 hematopoietic progenitor cells in vivo. ICRR, San Francisco, CA, 7/25/07, p. 190, abstract #P53157, 2007.

627.A Epperly Michael W, Melendez J Andres, Zhang Xichen, Franicola Darcy, Smith Tracy, Greenberger Joel S. Mitochondrial targeting of a catalase transgene product further increases radioresistance induced by MnSOD overexpression in 32D cl 3 murine hematopoietic progenitor cells. ICRR, San Francisco, CA, 7/25/07, p. 137, abstract #P52147, 2007.

628.A Greenberger Joel S, Smith Tracy, Schlesselman James J, Epperly Michael W. Absence of delayed negative sequelae in intravenous administration of manganese superoxide dismutase-plasmid liposome therapy protected survivors of total body irradiation. ICRR, San Francisco, CA, 7/25/07, p. 189, abstract #P53155, 2007.

629.A Greenberger Joel S, Smith Tracy, Schlesselman James J, Epperly Michael W. In a mouse model intravenous administration of manganese superoxide dismutase-plasmid liposomes (MnSOD-PL) protects against whole body irradiation. ASTRO, Los Angeles, CA, 11/07. IJROBP, 69(#3, Suppl.):S619, #2759, 2007.

630.A Goff Julie P, Epperly Michael W, Shields Donna, Smith Tracy, Seki M, Wittschieben J, Wood Rick, Greenberger Joel S. Cells lacking the Polq polymerase are more sensitive to ionizing irradiation in vitro and in vivo. ASTRO, Los Angeles, CA, 11/07. IJROBP, 69(#3, Suppl.):S53, #112, 2007.

631.A Epperly Michael, Nie Y, Shen Hongmei, Greenberger Joel S. Intraesophageal administration of manganese superoxide dismutase plasmid/liposomes (MnSOD-PL) pre-irradiation results in increased engraftment of bone marrow progenitors of esophageal stem cells. ASTRO, Los Angeles, CA, 11/07. IJROBP, 69(#3, Suppl.):S41, #74, 2007.

632.A Epperly Michael W, Zhang Xichen, Kay M A, Chen Z, Smith Tracy, Franicola Darcy, Greenberger Joel S. A minicircle plasmid containing the human manganese superoxide dismutase (MnSOD) transgene confers radioprotection to cells in vitro. ASTRO, Los Angeles, CA, 11/07. IJROBP, 69(#3 Suppl.):S42, #78, 2007.

633.A Epperly Michael W, Melendez J, Zhang Xichen, Franicola Darcy, Smith Tracy, Greenberger Joel S. Radioresistance induced by MnSOD overexpression in 32D cl 3 murine hematopoietic progenitor cells is further increased by localization of a catalase transgene product to the mitochondria. ASTRO, Los Angeles, CA, 11/07. IJROBP, 69(#3 Suppl.):S610, #2739, 2007.

634.A Niu Yunyun, Epperly Michael W, Shen Hongmei, Greenberger Joel S. Increased engraftment of bone marrow progenitors of esophageal stem cells resulting from pre-irradiation intraesophageal administration of manganese superoxide dismutase plasmid/liposome complexes (MnSOD-PL). ISEH, 8/07. Exp. Heme., 35:i. – v., p. 119, #p. 233, 36th ISEH, Hamburg, Germany, 2007.

635.A Greenberger Joel S, Smith Tracy, Schlesselman James J, Epperly Michael W. In a mouse model intravenous administration of manganese superoxide dismutase-plasmid liposomes (MnSOD-PL) protects against whole body irradiation. ISEH, 8/07. Exp. Heme., 35:i. – v., p. 82, # p123, 36th ISEH, Hamburg, Germany, 2007.

636.A Goff Julie P, Epperly Michael W, Shields Donna, Smith Tracy, Seki Mineaki, Wittschieben John, Wood Richard D, Greenberger Joel S. Increased radiation sensitivity in cells lacking the PolQ polymerase in vitro and in vivo. ISEH, 8/07. Exp. Heme, 35:i. – v., p. 113, #p215, 36th ISEh, Hamburg, Germany, 2007.

637.A Goff Julie P, Epperly Michael W, Shields Donna S, Smith Tracy, Seki Mineaki, Wang Hong, Wittschieben John, Wood Richard D, Dertinger Stephen, Torous Dorothea, Greenberger Joel S. Cells lacking the PolQ Polymerase are moderately sensitive to ionizing radiation and the oxidant induced toxicity of paraquat and bleomycin. ASH, December, 2007. Blood, Vol. 110, # 11, # 4037, p. 78B, 2007.

638.A Rugo Rebecca E, Epperly Michael W, Franicola Darcy, Greenberger Ben, Kimanduri Paavani, Wang Hong, Greenberger Joel S, Engelward Bevin P. DNA methylransferases modulates the bystander effect in mouse embryonic stem cells. ASH, December, 2007. Blood, Vol. 110, #11, #4154, p. 107B, 2007.

639.A Epperly Michael W, Franicola Darcy, Dixon Tracy, Zhang Xichen, Komanduri Paavani, Greenberger Benjamin, Wipf Peter, Koide Kazunori, Greenberger Joel S. Bone marrow small molecule radioprotectors. ASH, December, 2007. Blood, Vol. 110, #11, #4096, p. 93B, 2007.

640.A Niu Yunyun, Epperly, Michael W, Shen Hongmei, Greenberger Joel S. Increased engraftment of bone marrow progenitors of esophageal stem cells by intraesophageal administration of manganese superoxide dismutase plasmid/liposomes (MnSOD-PL) 24 hours before irradiation. ASH, December, 2007. Blood, Vol. 110, #11, #3695, p. 1079A, 2007.

641.A Epperly Michael W, Melendez J Andres, Zhang Xichen, Franicola Darcy, Smith Tracy, Greenberger Benjamin, Komanduri Paavani, Greenberger Joel S. Increased radioresistance of 32Dcl3 muring hematopoietic progenitor cells by mitochondrial targeting of a catalase transgene product. ASH, December, 2007. Blood, Vol. 110, #11, #513B, p. 3670, 2007.

642.A Greenberger Joel S, Smith Tracy, Schlesselman James J, Epperly Michael W. Intravenous administration of manganese superoxide dismutase-plasmid liposomes (MnSO-PL) in a mouse model protects against whole body irradiation. ASH, December, 2007. Blood, Vol. 110, # 11, # 2600, p. 766A, 2007.

643.A Zhang Xichen, Epperly Michael W, Kay Mark A, Chen Zhi-Ying, Smith Tracy, Franicola Darcy, Greenberger Benjamin, Komanduri Paavani, Greenberger Joel S. Minicircle plasmid containing the human manganese superoxide dismutase (MnSOD) transgene confers radioprotection to hematopoietic progenitor cell line 32Dcl 3. ASH, December, 2007. Blood, Vol. 110, # 11, # 5178, p. 367B, 2007.

644.A Goff Julie P, Xu Xiaochuan, Shields Donna S, Glowacki Julie, Greenberger Joel S, Wang James H-C. Effects of mechanical stretching, osteoblastogenesis, and vitamin D on cell traction force of human bone marrow stromal cells. ORS, 2008.

645.A Glowacki J, Zhou S, Greenberger JS, Epperly MW, Goff JP, Adler C, LeBoff MS. Age-related intrinsic changes in human bone marrow-derived mesenchymal stem cells and their differentiation to osteoblasts. J. B. M. R. (WO31), 22:Suppl. No. 1, p. 5370, 2007.

646.A Wollstein Gadi, Townsend Kelly, Epperly Michael W, Schuman Joel S, Greenberger Joel S. Manganese superoxide dismutase (MnSOD) in-vivo effect on post-radiation cataract. Research Meeting in Ophthalmology.

647.A Epperly Michael W, Franicola Darcy, Dixon Tracy, Zhang Xichen, Komanduri Paveni, Greenberger Benjamin, Koide Kazunori, Greenberger Joel S. Acetylated resveratrol is radioprotective of murine bone marrow. AACR, 05/08.

648.A Greenberger Joel S, Smith Tracy, Schlesselman James J, Wang Hong, Epperly Michael W. Radioprotection from total body irradiation using manganese superoxide dismutase-plasmid liposomes (MnSOD-PL) does not result in long term toxicity. AACR, 05/08.

649.A Zhang Xichen, Epperly Michael W, Dixon Tracy, Franicola Darcy, Greenberger Benjamin A, Komanduri Pavani, Chen Zhi-Ying, Kay Mark A, Greenberger Joel S. Manganese superoxide dismutase minicircle plasmid/liposome complex (mc-MnSOD-PL) is as effective as a full length Manganese Superoxide Dismutase Plasmid/Liposome Complex (MnSOD-PL) in radioprotection. ASGT, 06/08.

650.A Epperly Michael W, Zhang Xichen, Dixon Tracy, Franicola Darcy, Melendez J Andres, Greenberger Benjamin A, Komanduri Paavani, Greenberger Joel S. Overexpression of mitochondrially targeted catalase and manganese superoxide dismutase (MnSOD) in 32D cl 3 mouse hematopoietic progenitor cells increases antioxidant levels and radioresistance. ASGT, 06/08.

651.A Greenberger Joel S, Smith Tracy, Wang Hong, Schlesselman James, Franicola Darcy, Epperly Michael W. Systemic intravenous manganese superoxide plasmid/liposome complex (MnSOD-PL) protects mice from total body irradiation with no increased carcinogenesis. ASGT, 06/08.

652.A Xu Feng, Park Moo-Rim, Yu Hui, Hu Xiaoxia, Epperly Michael, Greenberger Joel, Cheng Tao. Hematopoietic stem cell repopulation modulated by MnSOD-PL in irradiated recipients. ASGT, 06/08.

653.A Epperly Michael W, Zhang Xichen, Dixon Tracy, Franicola Darcy, Melendez J A, Greenberger Benjamin A, Komanduri Paavani, Greenberger Joel S. Increased mitochondrial expression of catalase and manganese superoxide dismutase (MnSOD) results in increased antioxidant levels and radioresistance. RRS, 2008. Proc. RRS 54$^{th}$ Annual Mtg., Boston, MA, #PS3549, p. 91, 2008.

654.A Koide K, Epperly M W, Franicola D, Dixon T, Zhang X, Komanduri P, Greenberger B, Greenberger J S. Acetylated resveratrol: A new small molecule radioprotector. ASTRO, 2008. IJROBP, 72(1) Suppl. 2008, #3174, p. 5697, 2008.

655.A Greenberger Joel S, Dixon Tracy, Wang Hong, Schlesselman James, Franicola Darcy, Epperly Michael W. Intravenous injection of manganese superoxide dismutase-plasmid liposomes prior to total body irradiation of male and female mice improves survival with no increase in irradiation-induced cancers. RRS, 2008. Proc. RRS 54$^{th}$ Annual Mtg., Boston, MA, #PS3535, p. 87, 2008.

656.A Greenberger Joel S, Dixon Tracy, Franicola Darcy, Niu Yunyun, Zhang Xichen, Epperly Michael W. Manganese superoxide dismutase (MnSOD)-plasmid liposomes, C225, and Tirapazamine combination enhances radiotherapy of human orthotopic oral cavity squamous tumors. ASTRO, 2008. IJROBP, 72(1) Suppl. 2008, #1119, p. 56, 2008.

657.A Epperly Michael W, Pierce Joshua G, Dixon Tracy, Franicola Darcy, Wipf Peter, Greenberger Joel S. The mitochondrial targeted GS-nitroxide JP4-039 is radioprotective in vitro and in vivo. ASTRO, 2008. IJROBP, 72(1) Suppl. 2008, #181, p. 582, 2008.

658.A Greenberger Joel S, Dixon Tracy, Wang Hong, Schlesselman James, Franicola Darcy, Epperly Michael W. Improved survival with no increase in irradiation-induced cancers following intravenous injection of manganese superoxide dismutase-plasmid liposomes (MnSOD-PL) prior to total body irradiation. ISEH, 2008. Exp. Heme., 36:(Suppl. 1) S1-S99, p. 056, 2008.

659.A Zhang Xichen, Epperly Michael W, Dixon Tracy, Franicola Darcy, Greenberger Benjamin A, Komanduri Paavani, Chen Zhi-Ying, Kay Mark A, Greenberger Joel S. Manganese superoxide dismutase transgene delivered as a mincircle plasmid/liposome complex (mc-MnSOD-PL) is protective against total body irradiation. RRS, 2008. Proc. RRS 54$^{th}$ Annual Mtg., Boston, MA, #PS3536, p. 87, 2008.

660.A Koide Kazunori, Epperly Michael W, Franicola Darcy, Dixon Tracy, Zhang Xichen, Komanduri Paveni, Greenberger Benjamin, Greenberger Joel S. Acetylated resveratrol: A new small molecule radioprotector against irradiation induced hematopoietic syndrome. ISEH, 2008. Exp. Heme., 36: (Suppl.1) S1-S99, p. 064, 2008.

661.A Epperly Michael W, Pierce Joshua G, Dixon Tracy, Franicola Darcy, Wipf Peter, Greenberger Joel S. The mitochondrial targeted GS-nitroxide JP4-039 protects against irradiation induced damage in vitro and in vivo. ISEH, 2008. Exp. Heme., 36: (Suppl 1) S1 – S99, p. 066, 2008.

662.A Greenberger Joel, Wipf Peter, Kagan Valerian, Zhang Xichen, Epperly Michael. Mitochondrial targeted antioxidants protect against total body irradiation induced hematopoietic syndrome, and mitigate against irradiation induced life shortening. BioDose, Hanover, N.H., 2008.

663.A Epperly Michael W, Pierce Joshua G, Dixon Tracy, Franicola Darcy, Nie Suhua, Zhang Xichen, Vlasova Irina I, Wipf Peter, Kagan Valerian, Greenberger Joel. A mitochondrially targeted nitroxide JP4-039 protects and mitigates against total body irradiation induced hematopoietic syndrome. ASH, 2008.

664.A Gupta Kanika, Epperly Michael W, Franicola Darcy, Zhang Xichen, Pierce Joshua G, Wipf Peter, Greenberger Joel. Mitigation of irradiation induced potentially lethal damage (PLD) in hematopoietic cells by mitochondrial localized GS-Nitroxide, JP4-039. ASH, 2008.

665.A McDonald Peter R, Jiang Jian Fei, Dixon Tracy, Franicola Darcy, Zhang Xichen, Nie Suhua, Epperly Laura, Kagan Valerian, Lazo John, Epperly Michael W, Greenberger Joel S. Druggable genome siRNA-screening identifies Glybenclamide as a radioprotector against total body irradiation. ASH, 2008. Blood, 112(11):191, #504, 2008.

666.A Haley ML, Greenberger J, Heron DE, Jones H, and Lin CJ. Outcomes comparison of IMRT vs. 3D conformal therapy of the breast. Proceedings of the 50th Annual ASTRO Meeting, Boston, MA, ND. 2695, 72:1 Supl.:5479, 2008.

667.A Jiang J, Stoyanovsky D, Belikova NA, Zhao Q, Tyurina YY, Tungekar MA, Kapralova V, Greenberger JS, and Kagan VE. Mitochondria-targeted triphenylphosphonium conjugated niroxide functions as a radioprotector. Soc. of Toxicol. Mtg., March, 2009.

668.A Zabbarova Irina, Epperly Michael, Greenberger Joel, and Kanai Anthony. Selective colonic irradiation induces urinary bladder overactivity. Exp. Biol., 2009.

669.A Gokhale Abhay S, Epperly Michael, Glowacki Julie, Smith Tracy, Patrene Ken, Roodman G David, and Greenberger Joel S. Antioxidant therapy ameliorates ionizing irradiation induced delay in bone wound healing. AACR, 2009.

670.A Rajagopalan Malolan S, Gupta Kanika, Epperly Michael W, Franicola Darcy, Zhang Xichen, Kagan Valerian E, Wipf Peter, and Greenberger Joel S. The mitochondrial targeted nitroxide JP4-039 augments potentially lethal irradiation damage repair. AACR, 2009.

671.A Rajagopalan Malolan S, Epperly Michael W, Franicola Darcy, Dixon Tracy, Cao Shaonan, Niu Yunyun, and Greenberger Joel S. Thoracic radiosensitivity of homozygous deletion recombinant negative nitric oxide synthase 1 (NOS1-/-) mice is accompanied by paradoxical radioresistance of mesenchymal stem cells in vitro. AACR, 2009.

672.A Gokhale Abhay S, Epperly Michael, Glowacki Julie, Smith Tracy, Patrene Ken, Roodman G David, Greenberger Joel S. Manganese superoxide dismutase plasmid/liposome complex gene therapy ameliorates ionizing irradiation-induced delay in bone wound healing. ASGT, May, 2009.

673.A Gokhale Abhay S, Epperly Michael W, Smith Tracy, Patrene Ken, Roodman G David, Greenberger Joel S, Glowacki Julie. Intravenous MnSOD-PL administration ameliorates ionizing irradiation induced delay in osseous wound healing. ASGT, May, 2009.

674.A Huq M Saiful, Kim Jong Oh, Novotny Josef, Bednarz Greg, Palatine Richard, Reilly Michael, Paris Paul, and Greenberger Joel S. Acceptance and commissioning of a novel ionizing radiation emitting isotope hospital detection and notification system suitable for use in radiation counter-terrorism. AAPM, 7/09.

675.A Rajagopalan Malolan S, Gupta Kanika, Epperly Michael W, Franicola Darcy, Zhang Xichen, Wang Hong, Zhao Hong, Kagan Valerian E, Wipf Peter, Kanai Anthony, and Greenberger Joel S. Potentially lethal damage repair is enhanced by the mitochondrial targeted nitroxide JP4-039. ASTRO, 11/09. Vol. 75, No. 3, PS 550, #2822, 2009.

676.A Gokhale Abhay S, Epperly Michael, Glowacki Julie, Wang Hong, Wipf Peter, Dixon Tracey, Patrene Ken, and Greenberger Joel S. Small molecule GS-nitroxide ameliorates the ionizing irradiation-induced delay in bone wound healing measured in a novel murine model. ASTRO, 11/09. Vol. 75, No. 3, PS 551, #2823, 2009.

677.A Gokhale Abhay S, Epperly Michael W, Glowacki Julie, and Greenberger Joel S. Irradiation inhibits human bone marrow stromal cell differentiation to osteoblasts in vitro. Rad.Res.Soc., 10/09. Proc. 55th Annual Mtg. 10/4 – 10/7/09, PS1.29, p. 63, 2009.

678.A Epperly Michael W, Rugo Rebecca, Cao Shaonan, Wang Hong, Franicola Darcy, Goff Julie P, Shen Hongmei, Zhang Xichen, Wiktor-Brown Dominika, Engelward Bevin, and Greenberger Joel S. Investigation of the effects of aging on homologous recombination in long term bone marrow cultures. Rad. Res. Soc., 10/09. Proc. 55th Annual Mtg. 10/4 – 10/7/09, PS4.50, p. 114, 2009.

679.A Epperly Micahel W, Dixon Tracey M, Komanduri Paavani, Greenberger Benjamin A, Wang Hong, and Greenbergr Joel S. Maternal administration of manganese superoxide dismutase plasmid/liposome administration protects fetal mice from total body irradiation. Rad. Res. Soc., 10/09. Proc. 55th Annual Mtg. 10/4 – 10/7/09, PS6.32, p. 141, 2009.

680.A Zhang Xichen, Rajagopalan Malolan, Buchholz Bettina, Bauer Anthony, Franicola Darcy, Dixon Tracy, Cao Shaonan, and Greenberger Joel. Thoracic irradiation of nitric oxide synthase 1 homologous recombinant negative (NOS1-/-) mice induces esophageal dilation and early death while their mesenchymal stem cells are paradoxically radioresistant. Rad. Res. Soc., 10/09. Proc. 55th Annual Mtg. 10/4 – 10/7/09, PS6.42, p. 144, 2009.

681.A Rajagopalan Malolan S, Epperly Michael W, Stripp Barry R, Reynolds Susan D, Shen Hongmei, Dixon Tracey, Franicola Darcy, Zhang Xichen, Niu Yunyun, and Greenberger Joel S. Thoracic irradiation depletes clara cell secretory protein expressing murine lung progenitor cells. Rad. Res. Soc., 10/09. Proc. 55th Annual Mtg. 10/4 – 10/7/09, PS4.19, p. 107, 2009.

682.A Niu Yunyun, Wang Hong, Wiktor-Brown Dominika, Rugo Rebecca, Shen Hongmei, Huq Saiful, Engelward Bevin, Epperly Michael, and Greenberger Joel S. Manganese superoxide dismutase plasmid liposome complex protects irradiated esophageal cells from homologous recombination. Rad. Res. Soc., 10/09. Proc. 55th Annual Mtg. 10/4 – 10/7/09, PS4.48, p. 114, 2009.

683.A Goff Julie P, Epperly Michael W, Rugo Rebecca, Cao Shaonan, Wang Hong, Franicola Darcy, Shen Hongmei, Zhang Xichen, Wiktor-Brown Dominika, Engelward Bevin, and Greenberger Joel S. The effects of aging on homologous recombination in long term bone marrow cultures. ISEH, 2009.

684.A Gokhale Abhay S, Epperly Michael, Glowacki Julie, Smith Tracy, Patrene Ken, Roodman G David, and Greenberger Joel S. Systemic MnSOD-PL administration ameliorates ionizing irradiation induced delay in osseous wound healing. ISEH, 2009.

685.A Rajagopalan Malolan S, Gupta Kanika, Epperly Michael W, Franicola Darcy, Zhang Xichen, Kagan Valerian E, Wipf Peter, and Greenberger Joel S. Potentially lethal irradiation damage repair is augmented by a mitochondrial targeted nitroxide JP4-039. ISEH, 2009.

686.A Epperly Michael, Cao Shaonan, Yu Jian, and Greenberger Joel S. Uninhibited mitochondrial anti-apoptotic proteins in PUMA-/- mice results in increased longevity of long-term bone marrow cultures and radioresistance of derived hematopoietic progenitor cell lines. ISEH, 2009.

687.A Glowacki J, Gokhale AS, Epperly M, Wipf P, Smith TD, Patrene K, Greenberger JS. Irradiation-induced delay in bone wound repair in mice is mitigated by GS-nitroxide therapy. O.R.S., 2009.

688.A Stone Brandon, Rajagopalpan Malolan, Rwigema Jean-Claude, Salimi Umar, Dixon Tracy, Franicola Darcy, Goff Julie, Epperly Michael W, Bauer Anthony, Greenberger Joel. Moduation of neuronal nitric oxide synthase (NOS1) sensitized NOS1-/- mice to total body irradiation. ASH, 2009.

689.A Rwigema Jean-Claude, Gokhale Abhay, Glowacki Julie, Dixon Tracy, Patrene Ken, Roodman G David, Wipf Peter, Greenberger Joel. Impaired osseous wound healing following ionizing irradiation is ameliorated by mitochondrial targeted nitroxide JP4-039. ASH, 2009.

690.A Salimi Umar, Rajagopalan Malolan, Rwigema Jean-Claude, Dixon Tracy, Shen Hongmei, Epperly Michael W, Stirpp Barry, Greenberger Joel. Homing and engraftment of bone marrow derived cells in irradiated mouse lungs. ASH, 2009.

691.A Rwigema J, Gokhale A S, Epperly M, Glowacki J, Wang H, Smith T, Patrene K, Wipf P, and Greenberger J S. Mitochondrial targeted nitroxide JP4-039 ameliorates irradiation-induced delay in bone wound healing and may have role as anti-osteoporosis therapy in acute fracture situations in the elderly. Am. Geriatrics Soc., 5/12 – 15/10, Orlando, Florida.

692.A Epperly Michael W, Rajagopalan Malolan S, Rwigema Jean-Claude, Stone Brandon, Goff Julie, Dixon Tracy M, Franicola Darcy, and Greenberger Joel S. Esophageal administration of manganese superoxide dismutase plasmid liposome (MnSOD-PL) reverses thoracic irradiation sensitivity of niric oxide synthase one homologous recombinant negative (NOS-1-/-) mouse. AACR, 2010.

693.A Schillo RE, Tarhini AA, Belani CP, Luketich JD, Argiris A, Ramalingam SS, Liggit D, Championsmith T, Epperly MW, and Greenberger JS. A phase I study of concurrent chemotherapy (Paclitaxel and Carboplatin) and thoracic radiotherapy with swallowed manganese superoxide dismutase (MnSOD) plasmid liposome (PL) protection in patients with locally advanced stage III non-small cell lung cancer. ASCO, 2010.

694.A Epperly Michael W, Jones Jeffrey A, Montesinos Carlos, Dixon Tracy M, Wang Hong, and Greenberger Joel S. Consumption of a high antioxidant diet decreases life shortening in mice after total body irradiation. Rad. Res. Society, Maui, Hawaii, 10/10.

695.A Rwigema Jean-Claude, Epperly Michael W, Shields Donna, Franicola Darcy, Dixon Tracy, Doemling Alexander, and Greenberger Joel S. Small molecule inhibitors of p53/MDM2/MDM4 mitigate against ionizing irradiation damage in vitro and in vivo. Rad. Res. Society, Maui, Hawaii, 10/10.

696.A Greenberger Joel S, Dixon Tracy M, Franicola Darcy, Wipf Peter, and Epperly Michael W. Mitochondrial targeted peptide-like molecule (PLM) conjugated to 4-amino-tempo (JP4-039) mitigates against the ionizing irradiation induced hematopoietic syndrome. Rad. Res. Society, Maui, Hawaii, 10/10.

697.A Atkinson Jeffrey, Kapralov Alexandr, Huang Zhentai, Belikova Natalia A, Yanamala Naveena, Jiang Jianfei, Klein-Seetharaman Judith, Epperly Michael W, Stoyanovsky Detcho A, Greenberger Joel S, and Kagan Valerian E. Mitochondria-targeted ligands of heme-iron in cytochrome c as novel radioprotectors/radiomitigators. Rad. Res. Society, Maui, Hawaii, 10/10.

698.A Greenberger Joel S, Luketich James D, Gooding William, Pennathur Arjun, Petro Daniel, Kane Kevin, Zhang Xichen, Epperly Michael W, Belani Chandra, Argiris Ethan, Ramaglingam Suresh, Liggitt Denny, Championsmith Anthony, and Tarhini Ahmad. A phase I study demonstrating manganese superoxide dismutase plasmid liposome complex (MnSOD-PL) reduction of esophagitis following standard chemoradiation in surgically unresectable stage III NSCLC. ASTRO, 11/10/10. Int. J. Radiat. Oncol. Biol. Phys., 78(Suppl.,3):S201, #1135, 2010.

699.A Rwigema Jean-Claude, Kelley Eric, Epperly Michael W, Wipf Peter, and Greenberger Joel S. Effects of manganese superoxide dismutase-plasmid liposomes (MnSOD-PL) and mitochondrial targeted GS-nitroxide JP4-039 on oxidative stress in irradiated murine glial and neuronal cells may have therapeutic implications for ionizing radiation-induced neurocognitive impairment. ASTRO, 11/10/10.

700.A Rajagopalan Malolan S, Rwigema Jean-Claude, Stone Brandon, Epperly Michael W, Goff Julie, Dixon Tracy, Franicola Darcy, and Greenberger Joel S. Esophageal administration of manganese superoxide dismutase plasmid liposome complex (MnSOD-PL) protects nitric oxide synthase one homologous recombinant negative (NOS1-/-) mice from thoracic irradiation. ASTRO, 11/10/10.

701.A Rwigema Jean-Claude, Gokhale Abhay S, Epperly Michael, Glowacki Julie, Dixon Tracy, Patrene Ken, Roodman G David, Wipf Peter, and Greenberger Joel S. Manganese superoxide dismutase plasmid/lipid complex (MnSOD-PL) and JP4-039 ameliorate irradiation-induced delay in bone wound healing. ASTRO, 11/10/10.

702.A Epperly M, Brand R, Stottlemyer J, Dixon T M, Gao X, Li S, Huq S, Wipf P, Falo L D, and Greenberger J S. Topical application of GS-nitroxide JP4-039 emulsion mitigation ionizing irradiation induced skin burns. ASTRO, 11/10/10. Int. J. Radiat. Oncol. Biol. Phys., 78(Suppl. 3):S634, #2965, 2010.

703.A Epperly Michael W, Jones Jeffrey A, Montesinos Carlos, Dixon Tracy M, Wang Hong, and Greenberger Joel S. Consumption of a high antioxidant diet decreases life shortening in mice after total body irradiation, Implications for chronic radiation exposure. Chronic Rad. Cheliabiask, Russia, pg. 7, 2010.

704.A Rajagopalan Malolan S, Rwigema Jean-Claude, Gokhale Abhay, Glowacki Julie, Frantz Marie-Celine, Wipf Peter, Doemling Alexander, Beck Barbara, Wang Wei, Li Song, Gao Xiang, Epperly Michael W, and Greenberger Joel S. Novel Mitochondrial targeted radiation mitigators. India Conference on Radiation Mitigators, India, October, 2010.

705.A Flickinger, Jr., John, Shields Donna, Epperly Michael W, Zhang Xichen, and Greenberger Joel S. Carbamazepine, an autophage inducing drug, protects and mitigates irradiation damage to the murine hematopoietic cell line 32D cl 3. ASH, 2010. Blood, 116(21):1797, #4772, 2010.

706.A Goff Julie P, Wang Hong, Epperly Michael W, Shields Donna, Dixon Tracy M, Cao Shaonan, Franicola Darcy, and Greenberger Joel S. Effects of sublethal irradiation on murine bone marrow. ASH, 2010. Blood, 116(21):922, #2243, 2010.

707.A Jiang J, Stoyanovsky D, Maeda A, Greenberger Joel S and Kagan Valerian E. Are reactive oxygen species required for autophagy? Soc. of Tox., 2010.

708.A Kanter David, Shi Xiao-Hua, Beriwal Sushil, Epperly Michael W, Greenberger Joel S, and Sadovsky Yoel. Ionizing radiation causes cell injury in primary human trophoblasts. SGI 58th Annual Scientific Meeting, 2010.

709.A Greenberger Joel S. Fanconi Anemia: Use of antioxidant therapies. Fanconi Anemia Foundation Annual Meeting, Minneapolis, MN, 10/23/10.

710.A Epperly Michael W, Greenberger Joel S, Kim Hyun, Bernard Mark, Dixon Tracy, Franicola Darcy, Wipf Peter, Li Song, Gao Xiang, Kagan Valerian, and Amoscato Andrew. Swallowed small molecule GS-nitroxide, JP4-039, protects the irradiated esophagus. AACR, 2011.

711.A Bernard Mark E, Epperly Michael W, Franicola Darcy, Zhang Xichen, Shields Donna, Houghton Frank, Bakkenist Christopher J, Guinan Eva C, Kannan Neeta, and Greenberger Joel S. Distinct radiosensitivities of human FANCG-/- and FANC-D2-/- cell lines. AACR, 2011.

712.A Kim Hyun, Bernard Mark, Flickinger Jr. John, Epperly Michael W, Wang Hong, Dixon Tracy M, Shields Donna, Houghton Frank, and Greenberger Joel S. The autophagy inducing drug carbamazepine is a radiation protector and mitigator. AACR, 2011.

713.A Epperly Michael W, Wang H, Jones Jeffrey A, Dixon Tracy, Montesinos Carlos A, and Greenberger Joel S. Further amelioration of the late effects of total body irradiation (TBI) by manganese superoxide dismutase plasmid/liposome (MnSOD-PL) gene therapy supplemented by a continuous antioxidant-chemopreventive diet. ASGT, 2011.

714.A Kotsakis A, Ramalingam S, Tarhini A, Heron DE, Smith R, Friedland D, Petro D, Raez L, Brahmer J, Greenberger JS, Dacic J, Hershberger P, Landreneau R, Belani C, Luketich J, and Argiris A. Multi-center phase II study of Cetuximab in combination with thoracic radiotherapy followed by consolidation chemotherapy in patients with unresectable stage III non-small cell lung cancer (NSCLC). ASCO, 2011.

715.A Islam Zahid, Epperly Michael W, Mehdi Haider, Greenberger Joel S, and London Barry. Altered cardiac effects of total body irradiation in NOS1-/- Mice. AHA, 2011.

716.A Islam Zahid, Epperly Michael W, Mehdi Haider, Greenberger Joel S, and London Barry. Cardiac conduction defect may contribute to total body irradiation sensitivity of NOS1 knockout mice. The International Society of Heart Research, North American Section Meeting in Philadelphia on 22-25th May, 2011.

717.A Kim H, Bernard M, Flickinger J, Epperly MW, Wang H, Dixon TM, Shields D, Houghton F, Zhang X, and Greenberger JS. The autophagy inducing drug carbamazepine is a radiation protector and mitigator. ASTRO, 2011. pp.S192, #1074, IJROBP, Vol. 81, No. 2, Suppl., 2011.

718.A Kim H, Bernard M, Epperly MW, Shen H, Dixon TM, Amoscato AA, Doemling AS, Li S, Gao X, Wipf, P, et al. Intraesophageal administration of GS-Nitroxide (JP4-039) and p53/mdm2/mdm4 inhibitor (BEB55) ameliorates radiation esophagitis. ASTRO, 2011. pp. S024, #1079, IJROBP, Vol. 81, No. 2, Suppl., 2011.

719.A Kim H, Bernard M, Kanter D, Shi X, Beriwal S, Epperly MW, Shields D, Houghton F, Greenberger JS, and Sadovsky Y. Ionizing radiation causes cell injury in primary human trophoblasts. Proceedings of the 53rd Annual ASTRO Meeting, p. S717, IJROBP, Vol. 81, No. 2, #3061, 2011.

720.A Bernard Mark E, Kim Hyun, Rwigema Jean-Claude, Epperly Michael W, Dixon Tracy, Kelley Eric, and Greenberger Joel S. Effects of vagotomy on the radiosensitivity of NOS1-/- mice. ASTRO, 2011.

721.A Bernard Mark E, Epperly Michael W, Franicola Darcy, Zhang Xichen, Shields Donna, Houghton Frank, Bakkenist Christopher J, and Greenberger Joel S. GS-Nitroxide (JP4-039) mediated radioprotection of human Fanconi Anemia cell lines. ASTRO, 2011.

722.A O'Sullivan R. P., Greenberger J.S., Cao S., Epperly M., and Glowacki J. In vitro hematopoiesis and osteoblastogenesis with marrow from SAMP6 and SAMR1 mice. S.B.M.R., 2011.

723.A Epperly Michael W, O'Sullivan Regina P., Cao Shaonan, Dixon Tracy, Goff Julie P., Glowacki Julie, and Greenberger Joel S. Senescence accelerated mice (SAMP6) show poorer bone wound healing following irradiation. A.R.S., 2011.

724.A Greenberger Joel S, Lazo John S., Shields Donna, Dixon Tracy, Sharlow Elizabeth R., and Epperly Michael W. P13 kinase inhibitor LY294002 is both a radioprotector and mitigator. Rad. Research Society, 2011.

725.A Kim Hyun, Bernard Mark, Farkas Amy, Epperly Michael W, Shields Donna, Dixon Tracy M, Houghton Frank, Franicola Darcy, Zhang Xichen, Wang Hong, and Greenberger Joel S. Radiation dose protection and mitigation by Carbamazepine (CBZ) is autophagy independent. R.R. S. , 2011.

726.A Bernard ME, Kim H, Rwigema JC, Kelley EE, Epperly MW, Wipf P, and Greenberger JS. Effects of manganese superoxide dismutase-plasmid liposomes (MnSOD-PL) and mitochondrial targeted GS-nitroxide JP4-039 on oxidative stress in irradiated murine glial and neuronal cells. R.R.S., 2011.

727.A Kim Hyun, Bernard Mark E, Farkas Amy, Houghton Frank, Shields Donna, Goff Julie, Dixon Tracy, Zhang Xichen, Epperly Michael, and Greenberger Joel S. Ionizing irradiation protection and mitigation by Carbamazepine is p53 and autophagy independent. ASH, 2011. Blood, 118, No. 21, p. 1456, #3400, 2011.

728.A Epperly Michael W, O'Sullivan Regina P, Cao Shaonan, Dixon Tracy, Goff Julie P, Glowacki Julie, and Greenberger Joel S. Dysregulated bone wound healing and marrow function in senescence accelerated mice (SamP6). ASH, 2011. Blood, 118, No. 21, p. 1461, #3415, 2011.

729.A XuFeng Richard, Park Moo-Rim, Miao Weimin, Yu Hui, Epperly Michael W, Greenberger Joel S, and Cheng Tao. Hematopoietic stem cell repopulation modulated by ROS-detoxifying enzymes. Blood, 118, No. 21, p. 1786, # 4172, 2011.

730.A Kanter David, O'Brien Matthew B, Beriwal Sushil, Epperly Michael W, Greenberger Joel S, and Sadovsky Yoel. The effect of ionizing radiation on murine fetal growth. S.G.I., 59th Scientific Meeting, San Diego, CA, 3/21 – 24/12.

731.A Epperly Michael W, Chaillet J Richard, Cao Shaonan, Zhang Xichen, and Greenberger Joel S. Use of MnSOD tet on transgenic mice as a model for evaluating irradiation protection and mitigation. AACR, May, 2012.

732.A Goff Julie P, Skoda Erin, Li Song, Gao Xiang, Epperly Michael W, Franicola Darcy, Houghton Frank, Wipf Peter, and Greenberger Joel S. Localization of mitochondrial targeted GS-nitroxide JP4-039 BODIPY FL conjugate during radioprotection and mitigation in vivo. AACR, May, 2012.

733.A Frostegard J, Tyurin VA, Tyurina YY, Amoscato A, Su J, Balasubramanian KK, Winnica D, Maeda A, Fadeel B, Greenberger JS, Pitt BR, Mallampalli RK, and Kagan VE. Interrelationships of peroxidation and immunogenicity of cardiolipin: an oxidative lipidomics approach. S.O.P., March, 2012.

734.A Goff Julie, Shields Donna, Wang Hong, Skoda Erin, Sprachman Melissa, Wipf Peter, Atkinson Jeffrey, Epperly Michael, Kagan Valerian E, Lazo John S, and Greenberger Joel S. Identification of ionizing irradiation damage mitigators by evaluation of clonogenic survival of human umbilical cord blood progenitor cells. ASTRO, Boston, MA, September, 2012. P.S680, IJROBP, Vol. 84 (Suppl. 35), 2012, #2229.

735.A Epperly Michael W, Cao Shaonan, Dixon Tracy, Goff Julie P, Glowacki Julie, Wipf Peter, and Greenberger Joel S. Irradiation inhibition of bone repair in SAMP6 mice. ASTRO, Boston, MA, September, 2012. P. S674, IJROBP, Vol. 84 (Suppl. 35), 2012, #3214.

736.A Yang Yong, Epperly Michael W, Dixon Tracy M, Heron Dwight E, Greenberger Joel S, and Huq M Saiful. Total body irradiation at high dose rate using a True Beam accelerator results in increased survival in a mouse model. ASTRO, Boston, MA, September, 2012. P. S162, IJROBP, Vol. 84 (Suppl. 35), 2012, #3700.

737.A Kalash Ronny, Chaillet Richard, Houghton Frank, Zhang Xichen, Epperly Michael W, Cao Shaonan, and Greenberger Joel S. Irradiation induction of mRNA for redox-sensitive promoters and inflammatory cytokines in conditional Manganese Superoxide Dismutase (MnSOD) tet on-/- mouse bone marrow stromal cells. ASTRO, Boston, MA, September, 2012. P. S673, IJROBP, Vol. 84 (Suppl. 35), 2012, #5211.

738.A Kalash Ronny, Zhang Xichen, Houghton Frank, Epperly Michael W, Dixon Tracy M, and Greenberger Joel S. Elevated pulmonary MnSOD and endothelial gene expression heralds the onset of irradiation fibrosis. ASTRO, Boston, MA, September, 2012. P. S678, IJROBP, Vol. 84 (Suppl. 35), 2012, #3224.

739.A Sprachman Melissa M, Epperly Michael W, Wipf Peter, Shields Donna, Dixon Tracy M, Cao Shaonan, Goff Julie, and Greenberger Joel S. MMS350: a novel bifunctional sulfoxide with radiation protection and mitigation properties. ASTRO, Boston, MA, September, 2012. P. S680, IJROBP, Vol. 84 (Suppl. 35), 2012, #3228.

740.A Epperly Michael W, Chaillet J Richard, Goff Julie, Kalash Ronny, Shaffer Ben, Franicola Darcy, Houghton Frank, Cao Shaonan, Zhang Xichen, and Greenberger Joel S. Induction of MnSOD expression in MnSOD tet-on-/- murine bone marrow stromal cell lines correlates with temporal radiation resistance. ASTRO, Boston, MA, September, 2012. P. S677, IJROBP, Vol. 84 (Suppl. 35), 2012, #3223.

741.A Berhane Hebist, Epperly Michael W, Dixon Tracy M, Cao Shaonan, Shields Donna, Wipf Peter, Li Song, Gao Xiang, and Greenberger Joel S. Oral delivery of mitochondrial targeted GS-nitroxide JP4-039

protects Fanconi Anemia (FA) D2-/- mice from irradiation mucositis. ASTRO, Boston, MA, September, 2012. P. S677, IJROBP, Vol. 84 (Suppl. 35), 2012, #3222.

742.A Greenberger Joel S, Goff Julie P, Dixon Tracy M, Kim Hyun, Skoda Erin, Wipf Peter, Wang Hong, Li Song, Gao Xiang, and Epperly Michael W. Intraesophageal administration of radioprotector GS-Nitroxide (JP4-039) does not protect LSL-K-ras transgenic lung tumors. Radiation Research Society, October, 2012.

743.A Epperly Michael W, Cao Shaonan, Smith Tracy M, Friedlander Robert, and Greenberger Joel S. Lack of radioresistance of Caspase-1 homologous deletion recombinant negative mice. Radiation Research Society, October, 2012.

744.A Goff Julie, Epperly Michael W, Dixon Tracy M, Sprachman Melissa M, Wipf Peter, Zhang Xichen, and Greenberger Joel S. Live imaging of Luciferase positive bone marrow stromal cell migration to form radiation pulmonary fibrosis. Radiation Research Society, October, 2012.

745.A Kanter David, O'Brien Matthew B, Shi Xiao-Hua, Beriwal Sushil, Epperly Michael W, Greenberger Joel S, and Sadovsky Yoel. The effect of ionizing radiation on murine fetal growth. S.G.I. Conference, 2012.

746.A Houghton Frank, Epperly Michael W, Chaillet J Richard, Cao Shaonan, Zhang Xichen, and Greenberger Joel S. Use of MnSOD tet on transgenic mice as a model for evaluating irradiation protection. UPCI Retreat, 6/12.

747.A Kanter David, O'Brien Matthew B, Beriwal Sushil, Epperly Michael W, Greenberger Joel S, and Sadovsky Yoel. The effect of ionizing radiation on murine fetal growth. UPCI Retreat, 6/12.

748.A Kalash Ronny, Houghton Frank, Zhang Xichen, Wang Hong, Epperly Michael W, and Greenberger Joel S. Pulmonary endothelial cell irradiation damage signaling initiates late fibrosis. ASH, 12/12.

749.A Goff Julie, Dixon Tracy M, Epperly Michael W, Sprachman Melissa M, Wipf Peter, Zhang Xichen, and Greenberger Joel S. Serial imaging of luciferase positive bone marrow stromal cell migration to form radiation pulmonary fibrosis. ASH, 12/12.

750.A Berhane Hebist, Epperly Michael W, Cao Shaonan, Zhang Xichen, Shields Donna, Goff Julie, Sprachman Melissa, Wipf Peter, Li Song, Gao Xiang, and Greenberger Joel S. Diminished oxidative stress responses in bone marrow stromal cell lines derived from Fanconi Anemia (FancD2-/-) mice. ASH, 12/12.

751.A Dickson Ryan, Kim Jong Oh, Huq M Saiful, Bednarz Greg, Suyama Joe, Yealy Donald, Izadbakhsh Mark, and Greenberger Joel S. Interceptor and phantom trials of emergency radiation detection and notification system at UPMC Cancer Center. American Associates of Physicists in Medicine (AAPM) Penn Ohio Chapter Meeting, Beachwood, OH, 9/21/12.

752.A Lazo John S, Epperly Michael W, Sharlow Elizabeth R, Lira Ana, Skoda Erin, Wipf Peter, Kagan Valerian, and Greenberger Joel S. Disruption of the PI3K axis abrogates ionizing radiation-inducd cell death. Exp. Biology Annual Meeting, 2013.

753.A Houghton Frank, Zhang Xichen, Nimgaonkar Vishwajit L, D'Aliuto Leonard, Epperly Michael W, and Greenberger Joel S. Radiosensitivity of human inducible pluripotentail stem cells (iPSCs). ISEH Meeting, July, 2013.

754.A Kalash Ronny, Houghton Frank, Berhane Hebist, Wipf Peter, Shields Donna, Epperly Michael W, Chaillet J Richard, Cao Shaonan, Zhang Xichen, and Greenberger Joel S. GS nitroxide (JP4-039) induces radiation resistance of conditional MnSOD tet/tet murine bone marrow stromal cells. AACR, 2013.

755.A Berhane Hebist, Goff Julie P, Kalash Ronny, Epperly Michael W, Dixon Tracy, Franicola Darcy, and Greenberger Joel S. In field head and neck irradiation radiosensitivity of FancD2-/- mice and bystander effect reduction of distant marrow hematopoietic progenitor cells. AACR, 2013.

756.A Berhane Hebist, Epperly Michael W, Franicola Darcy, Goff Julie, Zhang Xichen, Shields Donna, Cao Shaonan, and Greenberger Joel S. Diminished oxidative stress responses and DNA repair in irradiated FancD2-/- mouse bone marrow stromal cell lines. ACRO, 2013.

757.A Kalash Ronny, Houghton Frank, Berhane Hebist, Chaillet J Richard, Zhang Xichen, Cao Shaonan, Epperly Michael W, Sprachman Melissa, Wipf Peter, and Greenberger Joel S. Small molecule radioprotectors JP4-039 and MMS350 alter irradiation induction of mRNA for redox-sensitive promoters and inflammatory cytokines in conditional Manganese Superoxide Dismutase (MnSOD) tet/tet mouse bone marrow stromal cell lines. ACRO, 2013.

758.A Houghton Frank, Epperly Michael W, Zhang Xichen, Nimgaonkar Vishwajit, and Greenberger Joel S. Radiosensitivity of human induced pluripotent stem cells (hiPSC) detectable by cell cycle analysis. ACGCT, 2013.

759.A Kalash Ronny, Berhane Hebist, Goff Julie, Zhang Xichen, Epperly Michael W, and Greenberger Joel S. Different epigenetic changes in the irradiated lungs of fibrosis-prone C57BL/6NHsd compared to fibrosis-resistant C3Hf/Kam mice. ASTRO, Atlanta, GA, 2013. IJROBP, 87(25), Supplement, #3018, p. S627, 2013.

760.A Kalash Ronny, Berhane Hebist, Goff Julie, Zhang Xichen, Epperly Michael W, and Greenberger Joel S. Significant differences in thoracic irradiation induced pulmonary gene transcripts between fibrosis-prone C57BL/6NHsd compared to fibrosis-resistant C3H/Hen mice. ASTRO, Atlanta, GA, 2013. IJROBP, 87(25), Supplement, #275, p. S112, 2013.

761.A Berhane Hebist, Kalash Ronny, Epperly Michael W, Goff Julie, Franicola Darcy, Zhang Xichen, Shields Donna, Cao Shaonan, Houghton Frank, and Greenberger Joel S. Radiobiologic differences between bone marrow stromal cells (mesenchymal stem cells) and hematopoietic progenitor cells from Fanconi Anemia (FancD2-/-) mice. ASTRO, Atlanta, GA, 2013. IJROBP, 87(25), Supplement, #52, p. S22, 2013.

762.A Berhane Hebist, Kalash Ronny, Goff Julie, Epperly Michael, Franicola Darcy, Dixon Tracy, Shields Donna, and Greenberger Joel. Radiosensitivity of the oropharyngeal mucosa of FancD2-/- mice correlates to novel gene expression responses to head and neck irradiation. ASTRO, Atlanta, GA, 2013. IJROBP, 87(25), Supplement, #1112, p. S53, 2013.

763.A Goff Julie, Kalash Ronny, Epperly Michael W, Dixon Tracy, Franicola Darcy, Sprachman Melissa M, Zhang Xichen, Cao Shaonan, Wipf Peter, and Greenberger Joel S. Reduction of late pulmonary fibrosis in thoracic irradiated C57BL/6HNsd mice by a water soluble radiation mitigator, MMS350. ASTRO, Atlanta, GA, 2013. IJROBP, 87(25), Supplement, #142, p. S639, 2013.

764.A Goff Julie, Dixon Tracy, Epperly Michael W, Kalash Ronny, Sprachman Melissa M, Zhang Xichen, Cao Shaonan, Wipf Peter, and Greenberger Joel S. Late pulmonary fibrotic phase specific homing of luciferase+ bone marrow stromal cells to the irradiated C57BL/6HNsd mouse lung. ASTRO, Atlanta, GA, 2013. IJROBP, 83(25), Supplement #278, p. S113, 2013.

765.A Epperly M, Sprachman M, Dixon T, Goff J, Shields D, Zhang X, Wipf P, and Greenberger J. MMS350: A water soluble radiation protector and mitigator. IJROBP, 27(23), Supplement, # 3144, p. S638, 2013.

766.A Houghton Frank, D'Aiuto Leonard, Epperly Michael W, Zhang Xichen, Nimgaonkar Vishwajit, and Greenberger Joel S. Relative radiosensitivity of human inducible pluripotent stem cells (hiPSC) compared to parent fibroblast line and cells of differentiated neural rosettes. ASTRO, Atlanta, GA, 2013.

767.A Berhane Hebist, Zhang Xichen, Kalash Ronny, Epperly Michael, Shields Donna, and Greenberger Joel S. Targeting radioprotectants based on low levels of mitohchondria and mtDNA in tumor cell lines. ASTRO, Atlanta, GA, 2013.

768.A Kalash Ronny, Berhane Hebist, Epperly Michael W, Yang Yong, Dixon Tracy M, Heron Dwight E, Greenberger Joel S, and Huq M Saiful. Gene transcript responses in 10MV photon at 2400 MU/min total body irradiated C57LBL/6NTac mice correlate with increased survival compared to the same TBI dose using 6MV photons or lower dose rates. ASTRO, Atlanta, GA, 2013. IJROBP, 87(25), Supplement, #120, p. S53, 2013.

769.A Berhane Hebist, Kalash Ronny, Goff Julie, Epperly Michael, Dixon Tracy, Franicola Darcy, Shields Donna, Zhang Xichen, Li Song, Guo Xiang, Wipf Peter, and Greenberger Joel. Amelioration of Fanconi Anemia (FancD2-/-) mouse head and neck irradiation toxicity by intraoral JP4-039. Radiation Research Society, New Orleans, LA, 2013.

770.A Kalash Ronny, Berhane Hebist, Zhang Xichen, Epperly Michael, Goff Julie, Shields Donna, Wang Hong, and Greenberger Joel S. Strategy of normal tissue radioprotection based on decreased mtDNA and increased cell cycle check point proteins in tumors. Radiation Research Society, New Orleans, LA, 2013.

771.A Berhane Hebist, Kalash Ronny, Epperly Michael W, Yang Yong, Dixon Tracy M, Heron Dwight E, Greenberger Joel S, and Huq M Saiful. Unexpected organ specific gene transcript response to clinical 10MV photons at 2400 MU/min and survival advantage in total body irradiated C57BL/6NTac mice. Radiation Research Society, New Orleans, LA, 2013.

772.A Kalash Ronny, Berhane Hebist, Goff Julie, Dixon Tracy M, Zhang Xichen, Epperly Michael W, Wang Hong, and Greenberger Joel S. Thoracic irradiation induced pulmonary gene transcripts significantly differ between fibrosis-prone C57BL/6HNsd and fibrosis-resistant C3H/Hen mice. Radiation Research Society, New Orleans, LA, 2013.

773.A Berhane Hebist, Kalash Ronny, Epperly Michael, Goff Julie, Franicola Darcy, Zhang Xichen, Shields Donna, Cao Shaonan, Houghton Frank, and Greenberger Joel. Selective radioresistance of bone marrow hematopoietic progenitor cells compared to stromal cells from Fanconi Anemia (Fancd2-/-) mice. Poster Presentations/Experimental Hematology, 41: S23-S75, P1155, pg. S63, 2013.

774.A Olipitz W, Wiktor-Brown D, Shuga J, Pang B, McFaline J, Lonkar P, Thomas A, Mutamba JT, Greenberger JS, Samson LD, Dedon PC, Yanch JC, and Engelward BP. Integrated molecular analysis indicates undetectable change in DNA damage in mice after continuous irradiation at ~400-fold natural background radiation. International Society for Molecular Biology and Evolution Meeting, Chicago, IL, July, 2013.

775.A Greenberger Joel S, Wipf Peter, Skoda Erin M, Sacher Joshua R, Brand Rhonda, Falo Louis, Li Song, Gao Xiang, and Epperly Michael W. Delivery of ionizing irradiation mitigator, JP4-039, by biodegradable skin patches. Mitigation and Treatment, Baltimore, MD, 7/30 – 8/2/13.

776.A Greenberger Joel S, Kalash Ronny, Goff Julie P, Sprachman Melissa, Berhane Hebist, Dixon Tracy, Zhang Xichen, Wipf Peter, and Epperly Michael W. Late irradiation pulmonary fibrosis is ameliorated by a water soluble radiation mitigator MMS350 in drinking water. Mitigation and Treatment, Baltimore, MD, 7/30 – 8/2/13.

777.A Kagan VE, Tyurin VA, Poloyac SM, Epperly MW, Greenberger JS, Bayir H, and Tyurina YY. Mitochondrial cardiolipin as a substrate for cytochrome c-catalyzed production of oxygenated lipid mediators, 52nd. Annual Meeting for Society of Toxicology; The Toxicologist: Suppl. 1, V. 132, Abstract #2009, p. 428, March 10-14, 2013, San Antonio, TX.

778.A Star A, Kapralov A, Amoscato A, Tyurin V, Seo W, Epperly M, Greenberger J, Tyurina Y, and Kagan V. Development of a mitochondria-targeted nano-complex of Imidazole-substituted Oleic Acid as a radiomitigator. 52nd Annual Meeting for Society of Toxicology; The Toxicologist: Suppl. 1, V. 132, Abstract #2010, p. 428, March 10-14, 2013, San Antonio, TX.

779.A Berhane H, Kalash R, Epperly MW, Goff J, Cao S, Franicola D, Zhang X, Shields D, Houghton F, Wang H, Sprachman M, Wipf P, Guinan E, Parmar K, and Greenberger JS. Radiobiologic differences between bone marrow stromal and hematopoietic progenitor cell lines from Fanconi Anemia (Fancd2-/-) mice. FARS, Houston, TX, 11/13.

780.A Berhane H, Kalash R, Epperly MW, Goff J, Franicola D, Xu M, Zhang X, Dixon T, Shields D, Wang H, Wipf P, and Greenberger JS. Head and neck irradiation sensitivity and distant bone marrow suppression in Fancd2-/- (FVB/N) mice is ameliorated by intraoral GS-nitroxide, JP4-039. FARS, Houston, TX, 11/13.

781.A Berhane Hebist, Goff Julie, Epperly Michael W, Xu Karen, Kalash Ronny, Franicola Darcy, Zhang Xichen, Li Song, Gao Xiang, Dixon Tracy, Shields Donna, Wang Hong, Wipf Peter, Parmar Kalindi, Ferris Robert, and Greenberger Joel S. Intraoral GS-nitroxide JP4-039 protects oral/oropharyngeal mucosa but not orthotopic tumors in Fancd2-/- (C57BL/6) mice. FARS, Houston, TX, 11/13.

782.A Berhane Hebist, Xu Man, Goff Julie, Kalash Ronny, Epperly Michael, Dixon Tracy, Shields Donna, Franicola Darcy, Li Song, Gao Xiang, Wipf Peter, and Greenberger Joel. Intraoral GS-nitroxide (JP4-039)

reduces local and distant marrow suppression toxicities in head and neck irradiated Fancd2-/- (FVB/N) mice. ASH, December, 2013.

783.A Kalash Ronny, Au Jeremiah, Epperly Michael, Goff Julie, Dixon Tracy, Franicola Darcy, and Greenberger Joel. Pulmonary irradiation fibrosis is preceded by increased endothelial gene expression. ASH, December, 2013.

784.A Epperly Michael, Kalash Ronny, Berhane Hebist, Goff Julie, Dixon Tracy, Zhang Xichen, Wang Hong, and Greenberger Joel. Distinct patterns of lung gene transcript induction in thoracic irradiated fibrosis-prone C57BL/6NHsd compared to fibrosis-resistant C3H/HeN mice. Poster Presentations/Experimental Hematology, 41: S23-S75, P1172, pg. S67, 2013.

785.A Shinde Ashwin, Fairman Jeff, Epperly Michael W, Dixon Tracy M, and Greenberger Joel S. Manganese superoxide dismutase plasmid liposome complex (MnSOD-PL) protects the murine oral cavity from irradiation induced mucositis. ASGT, 2014.

786.A Rhieu Byung, Shinde Ashwin, Kalash Ronny, Goff Julie P, Franicola Darcy, Dixon Tracy, Zhang Xichen, Epperly Michael W, Wipf Peter, Li Song, and Greenberger Joel S. Mesenchymal stem cells as a delivery system for anti-fibrotic genes to areas of irradiation-induced pulmonary fibrosis. ASGT, 2014.

787.A Holt Douglas, Minkoff David, Epperly Michael W, Wang Hong, Huq Saiful, Nimgaonkar Vishwajit, and Greenberger Joel S. Radiosensitivity of human induced pluripotent stem cells compared to parental fibroblasts. ASTRO, 2014. Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3454, p. 5782, 2014.

788.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael W, Guinan Eva, Parmar Kalindi, Wang Hong, Franicola Darcy, Zhang Xichen, Dixon Tracy, and Greenberger Joel S. Intraoral JP4-039 ameliorates irradiation-induced mucositis in tumor-bearing Fanconi anemia (FA) mouse model. ASCO, 2014.

789.A Gill Beant, Beriwal Sushil, Rajagopalan Malolan, Wang Hong, Hodges Kimberly, and Greenberger Joel. Quantitative evaluation of radiation oncologists' adaptability to cost-effective treatment programs. ASTRO, 2014. ASTRO, 2014, Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #2967, p. 5591, 2014.

790.A Rhieu Byung Han, Epperly Michael W, Dixon Tracy, Franicola Darcy, Goff Julie, Zhang Xichen, Wang Hong, Chaillet Richard, and Greenberger Joel S. Organ specific levels of MnSOD in TET-inducible manganese superoxide dismutase mice. ASTRO, 2014, Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3528, p. 5810, 2014.

791.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael W, Shields Donna, Cao Shaonan, Zhang Xicehn, Dixon Tracy, Greenberger Joel S. Disperate gene transcript patterns between radiosensitive bone marrow stromal and radioresistant hematopoietic cell lines from Fanconi anemia (FA) (Fancd2-/-) C57BL/6 mice. ASTRO, 2014. Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3526, p. 5809, 2014.

792.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael, Guinan Eva, Parmar Kalindi, Wang Hong, Franicola Darcy, Zhang Xichen, Dixon Tracy, and Greenberger Joel S. Intraoral JP4-039 ameliorates irradiation-induced mucositis during effective treatment of orthotopic tumors in Fanconi anemia (FA) (Fancd2-/-) C57BL/6 mice. ASTRO, 2014. Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3442, 2014.

793.A Rhie Byung Han, Epperly Michael W, Cao Shaonan, Goff Julie, Shields Donna, Franicola Darcy, Wang Hong, and Greenberger Joel S. Reduced radiation pulmonary fibrosis in Toll-like Receptor-4 (TLR4) deletion recombinant negative mice. ASTRO, 2014. Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #331, p. 5150, 2014; and Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3530, p. 5810, 2014.

794.A Greenberger Joel S. Amelioration of ionizing irradiation damage in Fanconi anemia (Fancd2-/- mice) by GS-nitroxide (JP4-039). Proceedings of AACR Special Conference on Cancer Susceptibility in Cancer Susceptibility Syndromes. San Diego, CA, 1-29-14 – 2-1-14, pg. 20, #1A15, 2014.

795.A Shinde Ashwin, Rhieu Byung Han, Epperly Michael W, Wang Hong, Shields Donna, Franicola Darcy, Zhang Xichen, Dixon Tracy, Wipf Peter, Sprachman Melissa, and Greenberger Joel S. Radiation mitigator drugs JP4-039 and MMS350 effects on gene transcripts specific to radiosensitive Fanconi anemia Fancd2-/- (C57BL/6) bone marrow stromal cells. ASTRO, 2014. Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3441, p. 5777, 2014.

796.A Rhieu Byung Han, Epperly Michael W, Dixon Tracy, Franicola Darcy, Goff Julie, Zhang Xichen, Chaillet Richard, and Greenberger Joel S. Doxycycline-dependence of total body irradiation (TBI) induction of stress-response genes in MnSOD tet/tet mice. ASTRO, 2014. Int. J. Radiat. Onc. Biol. Phys., 90(15): Suppl., #3528, p. 5810, 2014.

797.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael W, Wang Hong, Shields Donna, Cao Shaonan, Zhang Xichen, Dixon Tracy, and Greenberger Joel S. Distinct RNA transcript signatures in radiosensitive bone marrow stromal compared to radioresistant hematopoietic cell lines from Fanconi Anemia (FA) (Fancd2-/-) FVB/N mice. RRS, Las Vegas, NV, 2014.

798.A Rhieu Byung Han, Shinde Ashwin, Epperly Michael W, Dixon Tracy, Franicola Darcy, Goff Julie, Zhang Xichen, Wang Hong, and Greenberger Joel S. Doxycycline alters total body irradiation (TBI) induction of RNA transcripts in C57BL/6NHsd mice. RRS, Las Vegas, NV, 2014.

799.A Rhieu Byung Han, Shinde Ashwin, Epperly Michael W, Dixon Tracy, Franicola Darcy, Goff Julie, Zhang Xichen, Wang Hong, Chaillet Richard, and Greenberger Joel S. Organ-specific total body irradiation (TBI) induction of RNA transcripts in MnSODtet/tet mice. RRS, Las Vegas, NV, 2014.

800.A Shinde Ashwin, Rhieu Byung Han, Epperly Michael W, Wang Hong, Shields Donna, Franicola Darcy, Zhang Xichen, Dixon Tracy, Wipf Peter, Sprachman Melissa M, and Greenberger Joel S. Radiation mitigator drugs JP4-039 and MMS350 alter RNA transcription in radiosensitive Fanconi Anemia Fancd2-/- (FVB/N) bone marrow stromal cells. RRS, Las Vegas, NV, 2014.

801.A Rhieu Byung Han, Shinde Ashwin, Epperly Michael W, Dixon Tracy, Franicola Darcy, Goff Julie, Zhang Xichen, Wang Hong, Chaillet Richard, and Greenberger Joel S. Organ-specific total body irradiation (TBI) induction of antioxidant RNA transcripts in MnSODtet/tet mice. ISEH, 2014. Exp. Hematol, 42:532, #P1039, 2014.

802.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael, Guinan Eva, Parmar Kalindi, Wang Hong, Franicola Darcy, Zhang Xichen, Dixon Tracy, and Greenberger Joel S. Intraoral mitochondrial-

targeted GS-nitroxide JP4-039 ameliorates irradiation-induced mucositis and gene transcript biomarkers in head and neck tumor-bearing Fanconi Anemia (FA) (Fancd2-/-) mice. ISEH, 2014. Exp. Hematol, 42: 532, #P1038, 2014.

803.A Shinde Ashwin, Rhieu Byung Han, Franicola Darcy, Dixon Tracy, Wipf Peter, Epperly Michael W, and Greenberger Joel S. Intraoral JP4-039/F15 protects normal oral cavity of irradiated Fancd2-/- (C57BL/6) mice without protecting orthotopic tumors. Fanconi Anemia Research Foundation, Bethesda, MD, 9/18/14. FARF, Bethesda, MD, 9/21/14, p. 62.

804.A Rhieu Byung Han, Shinde Ashwin, Zhang Xichen, Wang Hong, Wipf Peter, Epperly Michael W, and Greenberger Joel S. Reduced irradiation or chemotherapy induced TGF-β in Fancd2-/- mouse marrow by JP4-039 and MMS350. Fanconi Anemia Research Foundation, Bethesda, MD, 9/18/14. FARF, Bethesda, MD, p. 48, September, 2014.

805.A Rhieu Byung Han, Shinde Ashwin, Epperly Michael W, Dixon Tracy, Zhang Xichen, Wang Hong, Chaillet Richard, and Greenberger Joel S. Organ-specific total body irradiation (TBI) induction of antioxidant RNA transcripts in MnSODtet/tet mice. UPCI Retreat, Pittsburgh, PA, July, 2014.

806.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael, Guinan Eva, Parmar Kalindi, Wang Hong, Franicola Darcy, Zhang Xichen, Dixon Tracy, and Greenberger Joel S. Intraoral GS-nitroxide JP4-039 in novel F15 emulsion ameliorates irradiation-induced mucositis without affecting tumor kill in tumor bearing Fanconi Anemia (FA) (Fancd2-/-) C57BL/6 mice. UPCI Retreat, Pittsburgh, PA, July, 2014.

807.A Shinde Ashwin, Rhieu Byung Han, Epperly Michael W, Shields Donna, Cao Shaonan, and Greenberger Joel S. Fancd2-/- oral cavity cells have increased mitochondrial content. F.A.R.F. Meeting, Bethesda, MD, October, 2014. FARF, Bethesda, MD, p. 69, September, 2014.

808.A Epperly Michael W, Rhieu Byung Han, Shinde Ashwin, Shields Donna, and Greenberger Joel S. Increased Fancd2-/- bone marrow hematopoietic colony forming cell sensitivity to Transforming Growth Factor-Beta (TGF-β). F.A.R.F. Meeting, Bethesda, MD, October, 2014. FARF, Bethesda, MD, p. 48, September, 2014.

809.A Epperly Michael W, Glowacki Julie, and Greenberger Joel S. GS-nitroxide, JP4-039, is an effective mitigator of combined injury (Irradiation plus bone fracture). RITN/CMCR Meeting, Bethesda, Maryland, Oct. 8 – 10, 2014.

810.A Shinde Ashwin, Berhane Hebist, Epperly Michael W, Parmar Kalindi, Guinan Eva, and Greenberger Joel S. Mitochondria targeted radiation mitigator, GS-nitroxide, JP4-039, is effective in DNA damage response deficient Fanconi Anemia (Fancd2-/-) mice. RITN/CMCR Meeting, Bethesda, Maryland, Oct. 8 – 10, 2014.

811.A Epperly Michael W, He Sherry, Willis John, Shields Donna, Zhang Xichen, Wipf Peter, and Greenberger Joel S. Radiation mitigators GS nitroxide JP4-039 and bifunctional sulfoxide MMS350 are mitochondrial antioxidants. RITN/CMCR Meeting, Bethesda, Maryland, Oct. 8 – 10, 2014.

812.A Brand Rhonda, Epperly Michael W, Dixon Tracy, Falo, Jr. Louis D, and Greenberger Joel S. Cutaneous delivery of JP4-039 using microneedle arrays (MNAs) effectively mitigates Total Body Irradiation (TBI). RITN/CMCR Meeting, Bethesda, Maryland, Oct. 8 – 10, 2014.

813.A Zhang Haojian, Kozono David, O'Connor Kevin, Vidal-Cardenas Sofia, Hamilton Abigail, Gaudiano Emily, Greenberger Joel, Bagby Grover, Grompe Markus, Parmar Kalindi, D'Andrea Alan. Bone marrow failure in Fanconi Anemia from hyperactive TGF-β signaling. ASH, December, 2014.

814.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael, Guinan Eva, Parmar Kalindi, Wang Hong, Franicola Darcy, Zhang Xichen, Li Song, Dixon Tracy, Greenberger Joel S. Intraoral mitochondrial-targeted GS nitroxide JP4-039 ameliorates radiation-induced mucositis and normalizes gene transcript biomarkers in oral cavity tissue, but not in orthotopic tumor-tumor-bearing Fanconi Anemia (FA) (Fancd2-/-) mice. ASH, December, 2014.

815.A Shinde Ashwin, Rhieu Byung Han, Berhane Hebist, Epperly Michael, Guinan Eva, Parmar Kalindi, Wang Hong, Franicola Darcy, Zhang Xichen, Li Song, Dixon Tracy, Greenberger Joel S. Intraoral mitochondrial-targeted GS nitroxide JP4-039 ameliorates radiation-induced mucositis in orthotopic tumor-bearing Fanconi Anemia (FA) (Fancd2-/-) mice. ASH, December, 2014.

816.A Zhang, H., Kozono, D., O'Connor, K.W., Vidal-Cardenas, S., Hamilton, A., Gaudiano, E., Greenberger, J., Bagby, G., Grompe, M., Parmar, K., and D'Andrea, A.D. TGF-β pathway inhibition rescues the growth of Fanconi Anemia hematopoietic cells. 26th Annual Fanconi Anemia Research Fund Scientific Symposium, FARF, Bethesda, MD, p. 49, 9/21/14.

817.A Epperly Michael W, Shinde Ashwin, Berhane Hebist, Rhieu Byung Han, Kalash Ronny, Xu Karen, Goff Julie, Franicola Darcy, Zhang Xichen, Dixon Tracy, Shields Donna, Wang Hong, Wipf Peter, Kalindi Parmar, Guinan Eva, Kagan Valerian, Tyurina Yulia, Ferris Robert L, Li Song, and Greenberger Joel S. Intraoral administration of mitochondrial targeted GS-nitroxide (JP4-039) radioprotects the oral mucosa but not orthotopic tumors in Fancd2-/- mice. AACR, Philadelphia, PA, April 18 – 22, 2015.

818.A Epperly Michael W, Cao Shaonan, Zhang Xichen, Wang Hong, Franicola Darcy, Dixon Tracy, and Greenberger Joel S. Long term bone marrow cultures from K14/E7 Fancd2-/- (129/Sv) mice show suppressed duration of hematopoiesis. AACR, Philadelphia, PA, April 18 – 22, 2015.

819.A Kagan Valerian, Greenberger Joel S, and Bayir Hulya. Deciphering mitochondrial redox lipid signaling in radiation damage leads to novel radioprotectors. 15th ICRR Symposium: "The Role of ROS in Radiation Response". Kyoto, Japan, May 29, 2015.

820.A Brand Rhonda, Erdos Geza, Epperly Michael W, Dixon Tracy M, Franicola Darcy, Falo Louis, Wipf Peter, and Greenberger Joel S. Effective topical delivery of radiomitigator GS-nitroxide (JP4-039) by microneedle arrays. ASTRO, San Antonio, TX, October 19 – 21, 2015.

821.A Bayir Hulya, Epperly Michael W, Kagan Valerian E, Wang Hong, and Greenberger Joel S. A combined injury model (total body irradiation and traumatic brain injury) for evaluation of radiation mitigators. ASTRO, San Antonio, TX, October 19 – 21, 2015.

822.A Greenberger Joel S, Shinde Ashwin, Berhane Hebist, Dixon Tracy M, Franicola Darcy, Li Song, Wipf Peter, Kagan Valerian, Parmar Kalindi, Guinan Eva, and Epperly Michael W. Mitochondrial localization of GS-nitroxide JP4-039 delivered in intraoral emulsion ameliorates radiation mucositis in Fanconi Anemia (FA) Fancd2-/- mice. ASTRO, San Antonio, TX, October 19-21, 2015.

823.A Epperly Michael W, Dixon Tracy M, Li Song, Wipf Peter, and Greenberger Joel S. Improved survival and development of E13 fetal mice by JP4-039/F14 treatment of pregnant females at 24 hours after total body irradiation (TBI). ASTRO, San Antonio, TX, October 19-21, 2015.

824.A Bernard ME, Holt DE, Heron DE, Beriwal S, Lukeitch JD, Friedland D, and Greenberger JS. Clinical outcomes and dosimetric parameters for Stage IIIB non-smal cell lung cancer. ASTRO, San Antonio, TX, October 19-21, 2015.

825.A Stoyanovsky Detcho A, Jiang Jianfei, Murphy Michael, Epperly Michael, Li Song, Greenberger Joel, Kagan Valerian, and Bayir Hulya. Mitigation of irradiation damage in vitro and in vivo by mitochondrial targeted glutathione peroxidase 4 mimic mito-ebselen. ASTRO, San Antonio, TX, October 19-21, 2015.

826.A Brand Rhonda M, Erdos Geza, Epperly Michael W, Dixon Tracy M, Franicola Darcy, Falo, Jr. Louis D, Wipf Peter, and Greenberger Joel S. Effective topical delivery of radiomitigator GS-nitroxide (JP4-039) by microneedle arrays. ASTRO, San Antonio, TX, October 19-21, 2015.

827.A Zhang Xichen, Shiva Sruti, Wang Yinna, Epperly Michael W, Franicola Darcy, and Greenberger Joel S. Radiosensitive Fanconi Anemia (FA) Fancd2-/- bone marrow stromal cells have abnormal mitochondria. Radiation Research Society, Weston, Florida, 9/19-9/22/15, PS 2-01, P129, 2015.

828.A Greenberger Joel S, Shields Donna, Dixon Tracy, and Epperly Michael W. TGF-β sensitivity of radiosensitive Fancd2-/- mouse bone marrow. Radiation Research Society, Weston, Florida, 9/19-9/22/15, PS 2-09, P130, 2015..

829.A Cao Shaonan, Epperly Michael W, Dixon Tracy, Shields Donna, Zhang Xichen, and Greenberger Joel S. Smad3-/- Fancd2-/- double knockout (DKO) mice display some Radiobiologic phenotypes of Fancd2-/- and some of SMAD3-/- mice. Radiation Research Society, Weston, Florida, 9/19-9/22/15, PS 2-07, P132, 2015.

830.A Epperly Michael W, Cao Shaonan, Zhang Xichen, Franicola Darcy, Dixon Tracy, and Greenberger Joel S. Human Papilloma Virus E7 oncogene induced radioresistance of cell lines derived from K14E7 Fancd2-/- mouse long-term bone marrow cultures (LTBMCs). Radiation Research Society, Weston, Florida, 9/19-9/22/15, PS 2-06, P. 132, 2015.

831.A Fidan Emin, Epperly Michael W, Wang Hong, Kagan Valerian E, Greenberger Joel S, and Bayir Hulya. Combined head injury plus radiation exposure shifts systemic response to radiation from anti- to pro-inflammatory. Neuroscience National Meeting, 2015.

832A. Jones JA, Johnston D, Montesinos CA, Putcha L, Wu H, Ansari R, Epperly M, Karouia F, Popov D, Hasse G, Shurshakov V, Safrikin AV, and Greenberger JS. Development of countermeasures for radiation exposure and oxidative stress during exploration class space missions. International Academy of Astronautics 2015 IAA Humans in Space Symposium, Prague, Czech Republic, 6-29-15 – 7-3-15, S28, P 92, 2015.

833A. Greenberger JS. Mitochondrial targets for radiation protection and mitigation. RRS, September, 2015.

834A. Stoyanovsky Detcho A, Jiang Jianfei, Murphy Michael, Epperly Michael, Li Song, Greenberger Joel, Kagan Valerian, and Bayir Hulya. Mitochondrial targeted glutathione peroxidase 4 mimic mito-ebselen mitigates irradiation damage. R.I.T.N., June, 2015.

835A. Epperly Michael W, Dixon Tracy M, He Siping, Shields Donna, Wipf Peter, Li Song, and Greenberger Joel S. Administration of two radiation mitigators: GS-JP4-039 and water soluble oxetanyl sulfoxide MMS350 improves total body irradiation (TBI) survival superior to one alone. R.I.T.N., June, 2015.

836A. Cao Shaonan, Epperly Michael W, Dixon Tracy, Shields Donna, Zhang Xichen, and Greenberger Joel S. Abrogation of TGFB signaling does not rescue the radiosensitive phenotype of hematopoiesis in Smad3-/- Fancd2-/- double knockout (DKO) mice. R.I.T.N., June, 2015.

837A. Bayir Hulya, Epperly Michael W, Fidan Emin, Wang Hong, Kagan Valerian E, and Greenberger Joel S. Combined total body irradiation and traumatic brain injury in mice produces expected increased brain inflammatory response. R.I.T.N., June, 2015.

838A. Epperly Michael, Brand Rhonda, Wipf Peter, Falo Lou, Erdos Geza, and Greenberger Joel S. Delivery of radiation mitigator JP4-039 by topical microneedle arrays (MNAs). R.I.T.N., June, 2015.

839A. Kagan Valerian E, Greenberger Joel S., and Bayir Hulya. Deciphering mitochondrial redox lipid signaling in radiation damage leads to novel radioprotectors. ICRR2015 15$^{th}$ International Congress of Radiation Oncology, Kyoto, Japan, 5/29/15.

840A. Greenberger Joel S, Cao Shaonan, Dixon Tracy, Shields Donna, Zhang Xichen, and Epperly Michael W. Abrogation of TGF-B signaling in double knockout (DKO) Smad3-/- Fancd2-/- mice does not alter radiosensitivity of bone marrow stromal cells. Fanconi Anemia Research Fund (FARF), Toronto, Ontario, Canada, 9/15, P57.

841A. Epperly Michael W, Shields Donna, Cao Shaonan, Zhang Xichen, Dixon Tracy, Wipf Peter, and Greenberger Joel S. Radioprotection of Fancg-/- mouse oral cavity by mitochondrial targeted JP4-039. Fanconi Anemia Research Fund (FARF), Toronto, Ontario, Canada, 9/15, P32.

842A. Jones Jeffrey, Karouia Fathi, Epperly Michael, Montesinos Carlos, Petrosino Joseph, Cristea Octav, and Greenberger Joel. Intestinal microbiome: Considerations of radiation exposure and health effects for exploration class space flight. IAA/HIS Meeting, Prague, Czech., 2015.

843A. Falvello Virginia, Epperly Michael W, Dixon Tracy, Franicola Darcy, Zhang Xichen, and Greenberger Joel S. Production of TGF-β is increased in the bone marrow of double knockout (DKO) SMAD3-/- Fancd2-/- mice. American Society of Hematology, Orlando, Florida, 12/5 – 12/8/15.

844A. Sivanathan Aranee, Zhang Xichen, Franicola Darcy, Cao Shaonan, Shields Donna, Epperly Michael W, and Greenberger Joel S. Transformed phenotype of bone marrow stromal cell lines derived from K14E7 Fancd2-/-mice. American Society of Hematology, Orlando, Florida, 12/5 – 12/8/15.

845A. Chen Katherine, Franicola Darcy, Shields Donna, Epperly Michael W, Zhang Xichen, and Greenberger JS. Radiosensitivity of Fancd2-/- mouse bone marrow stromal cells is not altered by abrogation of TGF-β signaling. American Society of Hematology, Orlando, Florida, 12/5 – 12/8/15.

846A. Chen Zean, Franicola Darcy, Shields Donna, Epperly Michael W, Zhang Xichen, and Greenberger Joel S. DNA cross-linking agent sensitivity of Fanconi Anemia (FA) cells is preserved in double knockout (DKO) SMAD3-/- Fancd2-/- mouse cell lines. American Society of Hematology, Orlando, Florida, 12/5 – 12/8/15.

847A. Gomez-Casal Roberto, Bhattacharya Chitralekha, Epperly Michael, Proia David, Wang Hong, Socinski Mark, Greenberger Joel, and Levina Vera. HSP90 inhibitor ganetespib eradicates cancer stem cells in human non-small cell lung cancer. Radiation Research Society Meeting, Weston, Florida, 2015, (P26-09), P236.

848A. Jones Jeffrey, Karouia Fathi, Epperly Michael, Montesinos Carlos, Petrosino Joseph, Cristea Octav, and Greenberger Joel. Intestinal microbiome: Considerations of radiation exposure and health effects for exploration class space flight. Radiation Research Society Meeting, Weston, Florida, 2015, (S12-02), P56.

849A. Epperly Michael W, Dixon Tracy, Li Song, Wipf, Peter, and Greenberger Joel S. Effects of radiation mitigator JP4-039 on total body irradiation (TBI) induced proinflammatory proteins in bone marrow. Radiation Research Society Meeting, Weston, Florida, 2015, (PS2-03), P. 130.

850A. Zhang H, Kozono D, O'Connor K, Vidal-Cardenas S, Rousseau A, Hamilton A, Moreau L, Gaudiano E, Greenberger J, Bagby G, Soulier J, Grompe M, Parmar K, and D'Andrea A. TGF-Beta pathway inhibition rescues the function of Hspcs derived from patients with Fanconi Anemia. 29th Fanconi Anemia Research Fund (FARF) Meeting, Toronto, Canada, 2015, P49.

851A. Epperly MW, Rigatti L, Dixon TM, Li S, Wipf P, and Greenberger JS. JP4-039/F14 treatment of E13 pregnant mice 24 hours after total body irradiation (TBI) improves survival, growth, and development of fetal mice. American Association for Cancer Research (AACR), New Orleans, LA, 2016.

852A. Greenberger JS, Rigatti L, Sivanathan A, Cao S, Zhang X, Shields D, Franicola D, and Epperly MW. Expression of the HPV E7 oncogene in K14E7 Fancd2-/- mouse long term bone marrow culture derived hematopoietic cells produces malignant plasmacytomas. American Association for Cancer Research (AACR), New Orleans, LA, 2016.

853A. Glowacki J, and Greenberger JS. Dysregulated hematopoiesis and osteogenesis in SAMP6 mice. American Society for Bone and Mineral Research (JBMR), Atlanta, GA, 2016.

854A. Greenberger J, Rigatti L, Hou W, Sivanathan A, Zhang X, Shields D, Franicola D, and Epperly M. The Human papilloma virus (HPV) E7 oncogene reverses the radioresistance of Fancd2-/- mouse hematopoietic progenitor cells, and generates malignant plasmacytomas. Poster Presentations/Experimental Hematology, 44:S56-S110, 2016. ISEH, San Diego, CA, 2016.

855A. Epperly M, Shen H, Zhang X, Franicola D, Shields D, and Greenberger J. Radiation fibrosis resistant SMAD3-/- mice demonstrate superior donor bone marrow stem cell transplantation capacity by competitive repopulation assay. Poster Presentations/Experimental Hematology, 44:S56-S110, 2016. ISEH, San Diego, Ca, 2016.

856A. Epperly MW, Krainz T, Zhang X, Li S, Wipf P, and Greenberger JS. Novel small molecule mitochondrial targeted nitroxides mitigate total body irradiation. ASTRO, Boston, MA, 2016.

857A. Greenberger JS, Rigatti L, Hou W, Sivanathan A, Zhang X, Shields D, Franicola D, and Epperly MW. Human papilloma virus (HPV) E7 oncogene mediated squamous cell malignancy of the oropharynx and cervix in K14E7 Fancd2-/- mice also causes hematopoietic cell radiosensitivity and malignant B cell transformation. ASTRO, Boston, MA, 2016.

858A. Horne ZD, Sun W, Gibson MK, Pennathur A, Luketich JD, Karlovits BJ, Heron DE, and Greenberger JS. Converting borderline-resectable, locally-advanced esophageal carcinoma to resectability with neoadjuvant chemotherapy. ASCO, Chicago, IL, 2016.

859A. Epperly MW, Rigatti L, Li S, Wipf, P, and Greenberger JS. Small molecule GS-nitroxide radiation mitigator, JP4-039/F14, is safe and effective in pregnant E13.5 mice. ASTRO, Boston, MA, 2016.

860A. Franicola D, Epperly MW, Wipf P, and Greenberger JS. The small molecule GS-nitroxide radiation mitigator, JP4-039, alters total body irradiation (TBI) induced gene expression in bone marrow of C57BL/6NTac mice. ASTRO, Boston, MA, 2016.

861A. Rigatti L, Epperly MW, Li S, Wipf, P, and Greenberger JS. Total body irradiation killing of fetal mice in E13.5 pregnant C57BL/6 females is mitigated by the GS-nitroxide JP4-039 delivered 24 hrs after exposure. Radiation Research Society Annual Meeting, Hawaii, 2016.

862A. Epperly MW, Shen HM, Zhang X, Franicola D, Shields D, and Greenberger JS. Radiation fibrosis resistant Smad3-/- mice demonstrate superior donor bone marrow stem cell transplantation capacity by competitive repopulation assay. Radiation Research Society Annual Meeting, Hawaii, 2016.

863A. Greenberger JS, Rigatti L, Hou W, Sivanathan A, Zhang X, Shields D, Franicola D, and Epperly MW. The human papilloma virus (HPV) E7 oncogene reverses the radioresistance of Fancd2-/- mouse hematopoietic progenitor cells and generates malignant plasmacytomas. Radiation Research Society Annual Meeting, Hawaii, 2016.

864A. Franicola Darcy, Epperly Michael W, Bayir Hulya, Kagan Valerian E, and Greenberger Joel S. Necrostatin-1 is a potent radiation mitigator which decreases total body irradiation induced signatures of inflammatory cell recruitment. Radiation Research Society Annual Meeting, Hawaii, 2016.

865A. Greenberger Joel S, Rigatti Lora, Hou Wen, Zhang Xichen, Shields Donna, Sivanathan Aranee, Franicola Darcy, and Epperly Michael W. Effects of the human papillomavirus (HPV) E7 oncogene on Fancd2-/- mouse marrow hematopoiesis, radiation sensitivity of different cell lineages, and generation of malignant plasmacytomas, Fanconi Anemia Research Fund Annual Meeting, Seattle, Washington, September, 2016.

866A. Greenberger Joel S, Cao Shaonan, Dixon Tracy, Shields Donna, Zhang Xichen, and Epperly Michael W. Marrow from a second strain of double knockout (DKO) SMAD3-/- Fancd2-/- mice (Uniform 129/Sv

background) shows marked reduction of duration of hematopoiesis in continuous bone marrow cultures. Fanconi Anemia Research Fund Annual Meeting, Seattle, Washington, September, 2016.

867A. Greenberger Joel S. Discovery of intestinal radiation mitigators by targeted oxidative lipidomics. Abstract for Presidential Symposium, Radiation Research Society, Hawaii, 2016.

868A. Glaser SM, Bongiorni DR, Balasubramani GK, Roberts MS, Jacobs BL, Beriwal S, Heron DE, and Greenberger JS. Multimodality evaluation of global healthcare spending for prostate cancer patients within an integrated delivery and finance system (IDFS). American Urology Society, Western Section 92nd. Annual Meeting, Kauai, Hawaii, October 23-28, 2016.

869A. Willis J, Epperly MW, Zhang X, Fisher R, Liang M, Wipf P, and Greenberger JS. Amelioration of irradiation induced oral cavity mucositis in Fanca-/- mice using JP4-039 in a novel oral emulsion. Fanconi Anemia Research Fund (FARF) Meeting, Seattle, WA, September, 2016.

870A. Thermozier S, Epperly MW, Franicola D, Zhang X, Fisher R, Shields D, Wang H, Willis JA, Luke C, Silverman GA, and Greenberget JS. Hematopoietic progenitor cells from the bone marrow of Serpin3A-/- mice are radioresistant. ASH Meeting, San Diego, CA, December, 2016, Blood, 128:2680, 2016.

871A. Keppel K, Epperly MW, Shields D, Hou W, Franicola D, Zhang X, Fisher R, and Greenberger JS. Radiation resistance of double knockout (DKO) Smad3-/- Fancd2-/- (129/Sv) mouse bone marrow stromal cell lines. ASH Meeting, San Diego, CA, December, 2016, Blood, 128:3901, 2016.

872A. O'Connor KW, Vidal-Cardenas S, Zhang H, Rodrigues A, Moreau L, Yang C, Epperly M, Grompe M, Shimamura A, Greenberger J, Parmar K, and D'Andrea AD. Hyperactive non-canonical TGF-β pathway signaling in Fanconi anemia bone marrow stromal cells contributes to growth suppression. ASH Meeting, San Diego, CA, December, 2016, Blood, 128:1039, 2016.

873A. Steinman Justin, Epperly Michael, Willis John, Wang Hong, Fisher Renee, Kagan Valerian, Bayir Hulya, Yu Jian, Wipf Peter, Li Song, Huq M Saiful, and Greenberger Joel S. Sequential delivery of ionizing radiation mitigators based on plasma, intestine, and bone marrow protein signatures. ASTRO, San Diego, CA, September, 2017.

874A. Tyurina Yulia Y, Tyurin Vladimir A, Amoscato Andrew A, Anthonymuthu Tami, Epperly Michael W, Watkins Simon S, Greenberger Joel S, Bayir Hulya, and Kagan Valerian E. Identification and quantification of esterified hepoxillin A3 in the ileum of mice after total body irradiation using oxidative phospholipidomics. ASMS, Indianapolis, IN, 2017.

875A. Glowacki Julie, Bellare Anuj, Greenberger Joel, Fisher Renee, Wipf Peter, Epperly Michael W. A murine combined injury model of total body irradiation and skin wound is mitigated using MMS350. ASTRO, San Diego, CA, September, 2017.

876A. Epperly Michael W, Fisher Renee, Rigatti Lora H, Garman Robert, Li Song, Wipf Peter, and Greenberger Joel S. Total body irradiation induced fetal brain developmental retardation in E13.5 pregnant C57BL/6Tac mice is mitigated by delayed maternal administration of JP4-039. ASTRO, San Diego, CA, September, 2017.

877A. Greenberger Joel S, Willis John, Hou Wen, Shields Donna, Zhang Xichen, and Epperly Michael W. Mouse Fanconi Anemia (FA) Fancd2-/- bone marrow stromal cells demonstrate ionizing irradiation induced senescence. ASTRO, San Diego, CA, September, 2017.

878A. Willis John, Epperly Michael W, Fisher Renee, Justin Steinman, and Greenberger Joel S. Amelioration of radiation induced oral cavity mucositis and bone marrow suppression in Fanca-/- and Fancg-/- mice using JP4-039 in novel oral liposomes. ASTRO, San Diego, CA, September, 2017.

879A. Steinman Justin, Epperly Michael, Willis John, Wang Hong, Fisher Renee, Yu Jian, Wipf Peter, Li Song, Huq M Saiful, Bayir Hulya, Kagan Valerian, and Greenberger Joel S. Optimal time of delivery of two radiation mitigators JP4-039 and Necrostatin-1 based on modification of irradiation induced plasma, intestine, and bone marrow protein by the first drug. Radiation Research Society, Can Cun, Mexico, October, 2017.

880A. Epperly Michael W, Bellare Anuj, Greenberger Joel, Fisher Renee, Wipf Peter, and Glowacki Julie. A murine combined injury model of total body irradiation and skin wound for evaluation of radiation mitigators. Radiation Research Society, Can Cun, Mexico, October, 2017.

881A. Morgan Gina M, Kutschke William, Matasic Daniel, Epperly Michael W, Greenberger Joel S, Kalen Amanda, Waldron Timothy, Schoenfield Joshua, McCormick Michael, Yoon Jin-Young, Spitz Douglas, and London Barry. The radiation mitigator MMS350 prevents bradyarrhythmias in irradiated mice. Am Soc Cardiology, 3/17.

882A. Willis John, Epperly Michael W, Fisher Renee, Wipf Peter, Li Song, Justin Steinman, and Greenberger Joel S. Intraoral GS-nitroxide (JP4-039) ameliorates radiation induced oral mucositis and distant (abscopal) bone marrow suppression in head and neck irradiated Fanconi Anemia (FA) Fanca-/- and Fancg-/- mice. Radiation Research Society Annual Meeting, Cancun, Mexico, October 17, 2017.

883A. Rigatti Lora H, Epperly Michael W, Bayir Hulya, Fisher Renee, Garman Robert, Wipf Peter, Li Song, and Greenberger Joel S. Mitigation of 3 Gy total body irradiation (TBI) induced E13.5 mouse fetal brain damage by maternal administration of JP4-039 on E14.5. Radiation Research Society Annual Meeting, Cancun, Mexico, October 17, 2017.

884A. Greenberger Joel S, Willis John, Hou Wen, Shields Donna, Zhang Xichen, and Epperly Michael W. Irradiation accelerated senescence in mouse Fanconi Anemia (FA) Fancd2-/- bone marrow stromal cells. Radiation Research Society Annual Meeting, Cancun, Mexico, October 17, 2017.

885A. Willis John, Epperly Michael W, Fisher Renee, Wipf Peter, Li Song, Parmar Kalindi, Guinan Eva, Justin Steinman, Greenberger Joel S. Amelioration of radiation induced oral mucositis and distant (abscopal) bone marrow suppression by intraoral mitochondria-targeted GS-nitroxide (JP4-039) in head and neck irradiated Fanconi Anemia (FA) Fanca-/- and Fancg-/- mice. Fanconi Anemia Scientific Symposium, Atlanta, GA, September, 2017.

886A. Greenberger Joel S, Willis John, Hou Wen, Shields Donna, Zhang Xichen, Epperly MW. Fanconi Anemia (FA) mouse bone marrow stromal cells demonstrate increased irradiation induced senescence. Fanconi Anemia Scientific Symposium, Atlanta, GA, September, 2017.

887A. Franicola Darcy, Epperly Michael W, Zhang Xichen, Fisher Renee, Greenberger Joel S. Bone marrow stromal cell lines from Fanconi Anemia (FA) Fancg-/- and Fanca-/- as well as Fancd2-/- mice have abnormal mitochondria. Fanconi Anemia Scientific Symposium, Atlanta, GA, September, 2017.

888A. Greenberger Joel S, Fisher Renee, Zhang Xichen, Rodriguez Alfredo, D'Andrea Alan, Parmar Kalindi, Guinan Eva, Epperly Michael W. Reduced breeding frequency of Smad3-/- (C57BL/6) Fancd2-/- (C57BL/6) and Smad3-/- (C57Bl/6) Fancd2-/- (129/Sv) double knockout (DKO) mice compared to other breeding combinations. Fanconi Anemia Scientific Symposium, Atlanta, GA, September, 2017.

889A. Zhang Xichen, Epperly Michael W, Shields Donna, Fisher Renee, Greenberger Joel S. A single HPV E6 or E7 oncogene transforms Fancd2-/- (129/Sv) but not Fancd2+/+ IL-3 dependent hematopoietic cell lines to factor independence. Fanconi Anemia Scientific Symposium, Atlanta, GA, September, 2017.

890A. Hou Wen, Epperly Michael W, Zhang Xichen, Shields Donna, and Greenberger Joel. Metformin is a radioprotector of Fancd2-/- (129/Sv and C57BL/6) bone marrow stromal cell lines in vitro. Fanconi Anemia Scientific Symposium, Atlanta, GA, September, 2017.

891A. Ejaz A, Epperly MW, Fisher R, Zhang X, Johngrass M, Schusterman MA, Kokai LE, Greenberger JS, and Rubin JP. Molecular basis of adipose-derived stem cell (ASC) therapy for management of radiation-induced fibrosis (RIF). International Federation for Adipose Therapeutics and Sicence (IFATS) Meeting, Miami, FL, 11-30-17 – 12-3-17.

892A. Wei Zhiyang A, Epperly Michael W, Shields Donna, Hou Wen, Franicola Darcy, Zhang Xichen, Fisher Renee, Bayir Hulya, Kagan Valerian, Wipf Peter, and Greenberger Joel S. Radiation resistance of C7BL/6 mouse bone marrow stromal cell lines induced by apoptosis inhibitor JP4-039 or necroptosis inhibitor Necrostatin-1, but not by simultaneous administration of both mitigators. American Society of Hematology (ASH) Annual Meeting, Atlanta, GA, 12-9-17 – 12-12-17.

893A. Jin Jian-Yue, Hu Chen, Xiao Ying, Zhang Hong, Ellsworth Susannah, Schild Steven, Bogart Jeffrey, Dobelbower Michael, Kavadi Vivek, Narayan Samir, Iyengar Puneeth, Robinson Clifford, Brufsky Adam, Greenberger Joel, Koprowski Christopher, Machtay Mitchell, Curran Walter, Paulus Rebecca, Choy Hak, Bradley Jeffrey, and Kong Feng-Ming. Higher radiation dose to immune system is correlated with poorer survival in patients with Stage III non-small cell lung cancer: A secondary study of a Phase III Cooperative Group Trial (NRG Oncology RTOG 0617). ASTRO Annual Meeting, San Diego, CA, 9/25/17.

894A. Ejaz A, Epperly MW, Fisher R, Zhang X, Johngrass M, Schusterman MA, Kokai LE, Greenberger JS, Rubin JP. Molecular basis of adipose-derived stem cell (ASC) therapy for management of radiation induced fibrosis (RIF). AACR Annual Meeting, Chicago, Illinois, April 14-18, 2018.

895A. Sivanathan AP, Zhang X, Hou W, Shields DS, Fisher R, Epperly M, Greenberger JS. Increased irradiation-induced senescence in Fanconi Anemia (FA) mice. AACR Annual Meeting, Chicago, Illinois, April 14-18, 2018.

896A. Epperly Michael W, Wipf Peter, Greenberger Joel S. Ionizing irradiation mitigator GS-nitroxide (JP4-039) is deliverable in a self-administration I.M. formulation. MH SRS Website (https://mhsrs.amedd.army.mil/sitepages/home.aspx, MH SRS Annual Meeting 2018.

897A. Greenberger Joel S, Fisher Renee, Donnelly Christopher, Watkins Simon, Ross Mark, Rigatti Lora, Epperly Michael W. Total body irradiation and bone marrow transplant significantly extends the paralysis free interval in amyotrophic lateral sclerosis mice ($SOD1^{G93A}$). ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018. IJROBP, 102:35, PS73, #145, 2018.

898A. Ejaz Asim, Epperly Michael W, Greenberger Joel S, Huq M Saiful, Rubin Peter. Adipocyte stem cells ameliorate total body irradiation induced hematopoietic syndrome and late radiation fibrosis. ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018. IJROBP, 102:35, PS187, #1060, 2018.

899A. Epperly Michael W, Wipf Peter, Fisher Renee, Greenberger Joel S. Ionizing irradiation mitigator GS-nitroxide (JP4-039) is deliverable in a self-administration I.M. formulation. ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018. IJROBP, 102:35, SU40, #2393, 2018.

900A. Thermozier Stephanie, Epperly Michael W, Franicola Darcy, Zhang Xichen, Fisher Renee, Shields Donna, Wang Hong, Willis John A, Luke Cliff, Silverman Gary A, Greenberger Joel S. Hematopoietic progenitor cells from the bone marrow of Serpinb3A-/- mice are radioresistant. ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.

901A. Tyurin Vladimir, Ting Hsiu-Chi, Reynolds Christian A, Tyurina Yulia Y, Yu Wenxi, Liang Zhuqing, Stoyanovsky Detcho A, Greenberger Joel S, Bayir Hulya, Anthonymuthu Tamil S, Greenberg Miriam L, Kagan Valerian E. Differential LC-MS study of CLD1-driven diversification of cardiolipins in$\Delta^{12}$-desaturasetransfected yeast cells. ASMS Society Meeting, San Diego, CA, June 3-7, 2018.

902A. Sivananthan AP, Shields DS, Fisher R, Franicola D, Hou W, Zhang X, Wipf P, Epperly M, Greenberger JS. Effects of total body irradiation and the radiation mitigator MMS350 on senescence in Fanconi Anemia, Fanca-/- mice. ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018. IJROBP, 103(3), SU40, #2397, 2018.

903A. Quinn Thomas, Ding Xuanfeng, Wilson George, Sivananthan Aranee, Epperly Michael W, Franicola Darcy, Wipf Peter, Greenberger Joel S, Steven Craig, Kabolizadeh Peyman. Proton radioprotection of Fanconi Anemia (Fanca-/-) mouse marrow stromal cell lines by mitochondrial targeted GS-nitroxide JP4-039. ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.

904A. Thor Maria, Deasy Joseph O, Hu Chen, Choy Hak, Komaki Ritsuko, Masters Gregory, Blumeschein George, Forster Ken, Oh Jung Hun, Kavadi Vivek, Narayan Samir, Timmerman Robert, Robinson Clifford, Greenberger Joel S, Biggs David, Augspurger Mark, Meng Joanne, Bradley Jeffrey. The role of heart-related dose-volume metrics on overall survival in the RTOG 0617 clinical trial. ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.

905A. Thermozier Stephanie, Epperly Michael W, Franicola Darcy, Zhang Xichen, Fisher Renee, Shields Donna, Wang Hong, Willis John A, Luke Cliff, Silverman Gary A, Greenberger Joel S. Serpinb3a—mice are

radioresistant. Radiation Research Society Meeting, Chicago, IL, September 23-26, 2018, PS1-35, p. 121, 2018..

906A. Sivananthan Aranee P, Shields Donna S, Fisher Renee, Franicola Darcy, Hou Wen, Zhang Xichen, Wipf Peter, Epperly Michael W, Greenberger Joel S. The radiation mitigator, MMS350, ameliorates irradiation-induced senescence in Fanconi Anemia, Fanca-/- mice. Radiation Research Society, Chicago, IL, September 23-26, 2018, PS5-04, p. 219, 2018.

907A. Ejaz Asim, Epperly Michael W, Greenberger Joel S, Huq M Saiful, Rubin Peter. Late radiation fibrosis is reduced by injection of adipocyte stem cells. Radiation Research Society, Chicago, IL, September 23-26, 2018.

908A. Greenberger Joel S, Fisher Renee, Donnelly Christopher, Watkins Simon, Ross Mark, Rigatti Lora, Epperly Michael W. Significant amelioration of paralysis in Amyotrophic Lateral Sclerosis mice ($SOD1^{G93A}$) by total body irradiation and bone marrow transplant. Radiation Research Society, Chicago, IL, September 23-26, 2018, PS1-22, p. 114, 2018.

909A. Epperly Michael W, Wipf Peter, Greenberger Joel S. Ionizing irradiation mitigation by intramuscular (I.M.) delivered GS-nitroxide (JP4-039) in a self-administration formulation. Radiation Research Society, Chicago, IL, September 23-26, 2018, PS6-01, p. 251, 2018.

910A. Quinn Thomas J, Ding Xuanfeng, Wilson George D, Sivananthan Aranee, Epperly Michael W, Franicola Darcy, Wipf Peter, Greenberger Joel S, Stevens Craig W, Kabolizadeh Peyman. The mitochondrial-targeted GS-nitroxide JP4-039 protects Fanconi Anemia (Fanca-/-) mouse marrow stromal cell lines from proton irradiation. Radiation Research Society, Chicago, IL, September 23-26, 2018, PS5-05, p. 220, 2018.

911A. Sivananthan Aranee, Fisher Renee, Shields Donna, Zhang Xichen, Franicola Darcy, Epperly Michael W, Wipf Peter, Greenberger Joel S. Reduced organ senescence in Fanca-/- mice at 1 year after 7.5 Gy total body irradiation by continuous administration of the water-soluble antioxidant MMS350. 30th Fanconi Anemia Research Fund Scientific Symposium, Newport Beach, CA, 9/27 – 9/30/18.

912A. Quinn Thomas J, Ding Xuanfeng, Wilson George D, Sivananthan Aranee, Thermozier Stephanie, Henderson Andrew, Epperly Michael W, Franicola Darcy, Wipf Peter, Greenberger Joel S, Steven Craig W, Kabolizadeh Peyman. Intraoral JP4-039/Miglyol-812-N amelioration of proton irradiation induced oral cavity toxicity in Fanca-/- mice. 30th Fanconi Anemia Research Fund Scientific Symposium, Newport Beach, CA, 9/27 – 9/30/18.

913A. Epperly Michael W, Zhang Xichen, Wipf Peter, Greenberger Joel S. Fancd2-/- (129/Sv) IL-3 dependent hematopoietic progenitor cells, and HPV (E6) transformed malignant cell lines in a novel assay for normal stem cells specific Metformin-analogue induced cell cycle arrest. 30th Fanconi Anemia Research Fund Scientific Symposim, Newport Beach, CA, 9/27 – 9/30/18.

914A. Zhang Xichen, Rigatti Lora, Epperly Michael W, Greenberger Joel S. Malignant transformation of IL-3 dependent Fancd2-/- hematopoietic progenitor cells by single human papillomavirus E6 or E7 oncogene. 30th Fanconi Anemia Research Fund Scientific Symposium, Newport Beach, CA, 9/27 – 9/30/18.

915A. Rodriguez Alfredo, Yang Chunyu, Epperly Michael, Sambel Larissa, Grompe Markus, Parmar Kalindi, Greenberger Joel, and D'Andrea Alan. Hyperactive TGF-β pathway signaling is required for viable gestation during the development of Fanconi Anemia mice. 30th Fanconi Anemia Research Fund Scientific Symposium, Newport Beach, CA, 9/27 – 9/30/18.

916A: Henderson Andrew, Epperly Michael W, Fisher Renee, Shields Donna, Zhang Xichen, Rigatti Lora, Donnelly Christopher, Watkins Simon, and Greenberger Joel S. Increased longevity of continuous bone marrow cultures and radioresistance of bone marrow stromal cells from $SOD^{G93A}$ ALS (Amyotrophic Lateral Sclerosis) mice. American Society of Hematology (ASH) 60th Annual Meeting, San Diego, CA, December 1-4, 2018.

917A: Henderson Andrew, Epperly Michael W, Fisher Renee, Shields Donna, Rigatti Lora, Donnelly Christopher, Watkins Simon, and Greenberger Joel S. Increased longevity of continuous bone marrow cultures and radioresistance of bone marrow stromal cells from $SOD1^{G93A}$ ALS (Amyotrophic Lateral Sclerosis) mice. AACR Annual Meeting, Atlanta, GA, March 29, 2019.

918A: Tyurin Vladimir, Tyurina Yulia, Amoscato Andrew, Sparovero Louis J, Epperly Michael, St. Croix Claudette, Watson Alan, Watkins Simon, Greenberger Joel, Bayir Hulya, and Kagan Valerian. An inhibitor of $iPLA_2\gamma$, R-BEL, prevents lipid mediator generation in the ileum and leads to radiomitigation after total body irradiation. ASSMS Annual Meeting, Atlanta, GA, June 2 – 6, 2019, Submitted 1/28/19.

919A: Epperly Michael W, Thermozier Stephanie, Fisher Renee, Hou Wen, Wipf Peter, Bayir Hulya, Kagan Valerian, and Greenberger Joel S. Mitigation of total body irradiation by small molecule mitigators that target 3 distinct cell death pathways. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

920A: Ejaz Asim, Epperly Michael W, Greenberger Joel S, Huq M Saiful, and Rubin Peter. Adipocyte stem cells ameliorate total body irradiation induced hematopoietic syndrome and late radiation fibrosis. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

921A: Tyurin Vladimir, Tyurina Yulia, Amoscato Andrew, Sparovero Louis J, Epperly Michael W, St. Croix Claudette, Watson Alan, Watkins Simon, Greenberger Joel, Bayir Hulya, and Kagan Valerian. R-BEL mitigates total body irradiation by inhibiting iPLA2γ which prevents lipid mediator generation in the ileum. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

922A: Thermozier Stepanie, Epperly Michael W, Franicola Darcy, Zhang Xichen, Fisher Renee, Shields Donna, Wang Hong, Luke Cliff, Silverman Gary, and Greenberger Joel S. Radioresistance of Serpinb3a-/- mice and derived hematopoietic and marrow stromal cell lines. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

923A: Tian J, Rogers M, Epperly MW, Firek B, Fisher R, Novak EA, Mollen KP, Greenberger JS, and Morowitz MJ. The gut microbe Akkermansia muciniphilia increases after radiation injury and can be supplemented by gavage to improve survival in radiated mice. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

924A: Quinn Thomas J, Ding Xuanfeng, Li Xiaoqiang, Wilson George D, Buelow Katie, Sivananthan Aranee, Thermozier Stephanie, Henderson Andrew, Epperly Michael W, Franicola Darcy, Wipf Peter, Greenberger Joel

S, Stevens Craig W, and Kabolizadeh Peyman. JP4-039 induced amelioration of mucositis and abscopal bone marrow suppression in Fanconi Anemia Fanca-/- mice during pencil beam scanning proton therapy. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

925A: Eller Andrew, Thermozier Stephanie, Epperly Michael W, Fisher Renee, Hou Wen, Hug Saiful, Wipf Peter, Haley Marsha, Sahel Jose-Alain, and Greenberger Joel S. Intraocular injection of JP4-039 protects the retina from radiation induced apoptosis. ASTRO Annual Meeting, Chicago, IL, September 15-18, 2019.

926A: Greenberger Joel S, Fisher Renee, Zhang Xichen, Hou Wen, Shields Donna, Wipf Peter, and Epperly Michael. Mitochondrial targeted GS-nitroxide, JP4-039, mitigates total body irradiation (TBI) of Fanca-/- mice. Fanconi Anemia Research Fund Annual Meeting, Chicago, IL, September, 2019.

927A: Li Kelvin, Fisher Renee, Epperly Michael, Methe Barbara, and Greenberger Joel S. Stabilization of intestinal *Lactobacillus* correlates with successful total body irradiation mitigation. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

928A: Greenberger Joel S, Fisher Renee, Hou Wen, Zhang Xichen, Shields Donna, van Pijkeren Jan-Peter, Yu Jian, Bayir Hulya, Kagan Valerian, Wipf Peter, Watkins Simon, and Epperly Michael W. Total body irradiation mitigation by enteric administration of *Lactobacillus reuteri* secreting IL-22. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

929A: Tyurin Vladimir, Tyurina Yulia, Amoscato Andrew, Sparvero Louis J, Epperly Michael W, St. Croix Claudette, Watson Alan, Watkins Simon, Greenberger Joel, Bayir Hulya, and Kagan Valerian. Inhibition of neutrophil migration into the irradiated intestine by calcium independent phospholipase $A_2$ gamma inhibitor, R-Bel, mitigates ionizing irradiation-induced damage. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

930A: Eller Andrew, Thermozier Stephanie, Epperly Michael, Wipf Peter, Huq M Saiful, Haley Marsha, and Greenberger Joel S. Intravitreous administration of JP4-039 ameliorates ionizing irradiation-induced apoptosis of the retina. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

931A: Thermozier Stephanie, Hou Wen, Zhang Xichen, Fisher Renee, Shields Donna, Yu Jian, Bayir Hulya, Kagan Valerian, and Greenberger Joel S. Radiation mitigation by signature (biomarker) directed sequential administration of three drugs, which block ferroptosis, necroptosis, and apoptosis. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

932A: Bayir Hulya, Epperly Michael, Fisher Renee, Zhang Xichen, Hou Wen, Shields Donna, Greenberger Joel S, Wipf Peter, and Kagan Valerian. Ionizing irradiation-induced parthanatos, a second mitochondrial-based cell death pathway. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

933A: Greenberger Joel S, Fisher Renee, Zhang Xichen, Hou Wen, Shields Donna, Wipf Peter, and Epperly Michael W. Mitochondrial targeted GS-nitroxide, JP4-039, mitigates total body irradiation (TBI) of Fanca-/- mice. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

934A: Beumer Jan H, Guo Jianxia, Christner Susan M, Parise Robert A, Wipf Peter, Epperly Michael W, Greenberger Joel S, Eiseman Julie L. Bioavailability and tissue distribution of JP4-039 after intramuscular

administration to female C57BL/6 mice. Radiation Research Society Annual Meeting, San Diego, CA, November, 2019.

935A: Christie IG, Chan EG, Luketich JD, Greenberger J, Gooding WE, Burton S, Schuchert M, Awais O, Christie N, Pennathur A. Stereotactic ablative radiosurgery for treatment of limited pulmonary metastases. Association of VA Surgeons Annual Meeting, Pittsburgh, PA, April 19, 2020.

936A: Epperly MW, Yu J, van Pijkeren J-P, Methe B, Li K, Fisher R, Lundy J, Zhang X, Liebowitz B, Alexander LM, Greenberger JS. Intestinal microbime modifications for mitigation of the gastrointestinal syndrome. ASTRO Annual Meeting, Miami Beach, FL, October 25, 2020.

937A: Eller A, Fisher R, Hou W, Davoli K, Epperly MW, Huq S, Chang J, Sahel JA, Wipf P, Greenberger JS. Mouse model for the study of acute radiation retinal toxicity. Am Soc of Ophthalmology, LaJolla, CA, May 14-16, 2020.

938A: Epperly MW, Yu J, van Pijkeren J-P, Methe B, Li K, Fisher R, Lundy J, Zhang X, Shields D, Hou W, Leibowitz B, Wipf P, Alexander LM, Huq MS, Wang H, Greenberger JS. Specific components of the intestinal microbiome mitigate the radiation-induced gastrointestinal syndrome. ASTRO, Miami Beach, FL, November 25-28, 2020. Int J Radiat Oncol Biol Phys, Nov. 1, 2020, 108(35): 592, 2020, #190.

939A: Lewis L, Tang A, Wise-Draper T, Myers K, Greenberger J, Takiar V. A graduated trial of radiation therapy to maximize safety in a patient with Fanconi Anemia and recurrent head and neck squamous cell carcinoma. ASTRO, Miami Beach, FL, November 25-28, 2020.

940A: Espinal A, Epperly M, Mukherjee A, Shields D, Hou W, Fisher R, van Pijkeren J-P, Patel R, Islam N, Greenberger JS. Biological effects of abdominal irradiation on intestinal barrier breakdown identified by second-generation probiotic, LR-IL-22, ASH Annual Meeting, December 5-8, 2020.