CURRICULUM VITAE

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EDUCATION:

9/1992-3/1996	**Ph.D.,** in Cancer Biology, Harvard University, Boston, MA
9/1983-6/1986	**M.S.,** in Radiotoxicology, Suzhou Medical College, China
9/1978-6/1983	**M.D.,** Suzhou Medical College, China

RESIDENCY/INTERNSHIP

7/2002-6/2006	Resident, Dept. of Radiation Oncology, Vanderbilt University Medical Center, Nashville, TN
6/2001-6/2002	Intern, Dept. of Surgery, New England Medical Center, Boston, MA
7/1983-6/1986	Resident, Dept. of Medicine, Suzhou Medical College Hospital, China

POSTDOCTORAL RESEARCH FELLOWSHIP

3/1997-4/1998	Department of Aging, Harvard Medical School, Boston, MA
4/1991-8/1992 3/1996-3/1997	Department of Cancer Cell Biology, Harvard School of Public Health, Boston, MA

ACADEMIC POSITIONS:

07/2006-Present	**Attending Physician**, Dept. Radiation Oncology, Vanderbilt University Medical Center, Nashville, TN
10/2004-Present	**Assistant Professor**, Dept. of Radiation Oncology, Vanderbilt University School of Medicine, Nashville, TN
12/2006-Present	**Assistant Professor**, Dept. of Cancer Biology, Vanderbilt University School of Medicine, Nashville, TN
7/2002-9/2004	**Instructor**, Dept. of Radiation Oncology, Vanderbilt University School of Medicine, Nashville, TN
4/1998-6/2002	**Instructor**, Department of Radiation Oncology, Massachusetts General Hospital, Harvard Medical School, Boston, MA
4/1990-4/1991	**Visiting Scientist,** Institute of Medicine, Nuclear Research Center Julich GMBH, Germany

RESEARCH INTERESTS:

-Molecular mechanisms of DNA double-strand-break (DSB) repair
-Impact of chromosomal DSB repair deficiency in genomic instability, carcinogenesis, and cytotoxic response of tumor to cancer therapy
-DNA repair as an avenue for protection of normal tissues in genotoxic cancer therapy
- Regulation of subcellular location tumor suppressors, especially BRCA1 and p53; its application as predictive marker of response to DNA damaging agents and as novel target to enhance cancer response to treatment.
-the mechanism of brain tumor stem cell resistance to radiation and chemotherapy

CLINICAL INTERESTS:

CNS cancer
Stereotactic radiosurgery
GI cancer
Breast cancer

GRANT SUPPORT:

Active Grants:

12/2006-01/2011	*Principal Investigator***,** NIH-NCI (1 R01 CA 118158-01): "The role of BRCA1 in nonhomologous repair of chromosomal double strand breaks"
07/2006-06/2009	Development Fund, Department of Radiation Oncology, VUMC

Previous Grants:

05/2003-04/2006	*Principal Investigator***,** Susan G. Komen Breast Cancer Research Award (BCTR0201704): "DNA damage-induced BRCA1 nuclear export-a potential marker for tumor response to cytotoxic therapy".
2004	*Principal Investigator,* pilot project from Breast SPORE, Vanderbilt-Ingram Cancer Center
2000-2002	*Principal Investigator,* Avon Breast Cancer research Award
1999-2000	*Principal Investigator,* Massachusetts Department of Health, Breast Cancer Program
1999-2000	*Principal Investigator,* American Cancer Society (ACS-IRG)
1996, 1997	*Investigator,* National Research Service Award

PROFESSIONAL MEMBERSHIP:

American Association for Cancer Research
Radiation Research Society
American Society for Therapeutic Radiology and Oncology

TEACHING ACTIVITIES:

Lecture Series:

2002-05	Clinical Radiation Oncology (6-7 students, 4 hours /year)
2006-present	Clinical Radiation Oncology Resident teaching

Training molecular biology technicians:

1998-1999	Suhua Wu
2000-2001	Christina McDonald

Postdoctoral Fellows:

1999-2000	Qi Wang, M.D., Ph.D.
2000-2002	Junyan Zhang, M.D. Ph.D.
2001-2002	Zihui Feng, M.D., Ph.D.
2002-2004	Xingpin Chen, Ph.D.
2002-2006	Jing Zhuang, Ph.D.
2004-present	Hong Wang, M.D., Ph.D.
2006-present	Liping Li, Ph.D.
2007-present	Gunchun Jiang

Pre-Doctoral Student

2006- Edward Nam, B.S.

PEER REVIEWER:

Oncogene
Radiation Research
Cancer Research
Mutation Research
BMC Cancer
BBA Molecular Cell Research

ACDEMIC ACTIVITY:

2004- Member of the Vanderbilt Breast Cancer SPORE's Steering Committee
2006 Chairperson for symposium of Radiation and Chromosomal breakage repair at American Association for Cancer Research (AACR) annual meeting, Washington, D.C.
2007 Scientific reviewer, Prostate Cancer Study Section, Department of the Defense
2007 2008 American Association for Cancer Research (AACR) Annual Meeting Program Committee Member

INVITED LECTURES:

1. "Nuclear export and functional regulation of BRCA1" 48th ASTRO Annual Meeting, Philadelphia, November, 2006

2. "BRCA1-its function and regulation in repair chromosomal breaks" Dept of Biochemistry, University of New York, Buffalo, January, 2006

3. "DNA repair-a double edged sword in cancer treatment" Dept of Radiation Oncology, Roswell Park Cancer Institute, Buffalo, NY January, 2006

4. "BRCA1 nuclear export, a novel avenue to render p53-deficient cancer cell susceptible to ionizing radiation and Cisplatin induced cytotoxicity." 47th ASTRO Annual Meeting, Denver, October, 2005

5. "Lithium protects hippocampal neurons from radiation-induced chromosomal double-strand breaks." 47th ASTRO Annual Meeting, Denver, October, 2005

6. "The role of BRCA1 in DNA damage and repair." Northwestern University, Dept. of Pediatrics, Chicago, May 28th, 2004

7. "Defining the roles of BRCA1/2 in DNA double-strand break repair" Vanderbilt University Medical Center and Ingram Cancer Center, Nashville, April 10th, 2004

8. "The effect of BRCA1 on Responses of BRCA1/BRCA2 Deficient Cancer Cells To Cytotoxic Treatment. " 44th ASTRO Annual Meeting, New Orleans, October 6-10, 2002

9. "Human BRCA2 promotes spontaneous homologous recombination." 91st Annual Meeting of American Association for Cancer Research, San Francisco, California, April 1-5, 2000

10. "Tumor suppressor gene p53 affects mutational processes in human lymphoblast lines." NIH, National Cancer institute, March 23, 1996.

11. "Tumor suppressor gene p53 affects mutational processes in human lymphoblast lines." Boston Mutagenesis Society, MIT, April 18, 1996

12. "Altered p53 status correlates with differences in sensitivity to radiation-induced mutation and apoptosis in two closely related human lymphoblast lines." 43rd Annual Meeting of the Radiation Research Society, San Jose, California April 1-6, 1995

13. "Different cytotoxic and mutagenic responses induced by X-rays in two human lymphoblastoid cell lines derived from a single donor." 41st Annual Meeting of the Radiation Research Society, Dallas, Texas, March 20-25, 1993

PUBLICATIONS:

1. Xia, F., Zhu, S.-P. The metabolic process of Cs-134 and its inhibition effects on DNA synthesis in lymphocytes, thymocytes and bone marrow cells in mice. Radiat Protect. 9:81-89, 1987.

2. Schneeweiss, F.H.A., Xia, F., Sharan, R.N., and Feinendegen, L.E. A strong static magnetic field inhibits the poly-ADP-ribosylation of protections in human kidney T1-cells. *Bioelectrochemistry and Bioenergetic* 30:111-117, 1993

3. Amundson, S.A., Xia, F., Wolfson, K., and Liber, H.L. Different cytotoxic and mutagenic responses induced by X-rays in two human lymphoblastoid cell lines derived from a single donor. *Mutat Res* 286:233-241, 1993

4. Kelsey, K.T., Xia, F., Bodell, W.J., Spengler, J.D., Chritiani, D.C., Dockery, D.W., and Liber, H.L. Genotoxicity to human cells induced by air particulates isolated during the Kuwait oil fires. *Environ Res* 64:18-25, 1994

5. Xia, F., Amundson, S.A., Nickoloff, J.A., and Liber, H.L. Different capacities for recombination in closely related human lymphoblastoid cell lines with different mutational responses to X-irradiation. *Mol Cell Biol* 14:5850-5857, 1994

6. Xia, F., Liber, H.L. Electroporation of human lymphoblastoid cells. *In* Nickoloff, J. A., Walker, J. M. Methods in Molecular Biology, Vol. 48 pp. 151-160, New Jersey: Humana Press Inc., 1995

7. Phillips, E.N., Xia, F., Kelsey, K.T., and Liber, H.L. X-ray-induced and spontaneous mutational spectra at hprt in related human lymphoblast cell line that express wild-type or mutant forms of p53. *Radiat Res* 143:255-262, 1995

8. Xia, F., Wang, X., Wang, Y-H., Tsang, N-M., Yandell, D.W., Kelsey, K.T., and Liber, H.L. Altered p53 status correlates with differences in sensitivity to radiation-induced mutation and apoptosis in two closely related human lymphoblast lines. *Cancer Res* 55:12-15, 1995

9. Xia, F. and Liber H.L. Tumor suppressor gene p53 modifies mutational processes in a human lymphoblastoid cell lines. *Mutat Res* 373:87-97, 1997

10. Turner, N.A., Xia, F., Azhar, G., Zhang, X., Liu, L., and Wei J.Y. Oxidative stress induces DNA fragmentation and caspase activation via the c-Jun NH2-terminal kinase pathway in cardiac muscle cells. *J Mol Cell Cardiol* 30:1789-801, 1998

11. Mao, Z.X., Bonni, A., Xia, F., Nadal-Vicens, M., and Greenberg, M. Neuronal activity dependent cell survival mediated by the transcription factor MEF2. *Science* 286: 785-90, 1999

12. Willers, H., McCarthy, E.E., Wu, B., Tang, W., Taghian, D.G., Xia, F., Powell, S.N. Dissociation of p53-mediated suppression of homologous recombination from G1/S cell cycle checkpoint control. *Oncogene* 19:632-639, 2000

13. Xia, F., Taghian, D.G., Defrank, J.S., Willers, H., Iliakis, G., Powell, S.N. Deficiency of human BRCA2 leads to impaired homologous recombination but maintains normal non-homologous end-joining. *Proc Natl Acad Sci U.S.A* 98:8644-9, 2001

14. Wang, H., Zeng, Z., Dibiase, S.J., Xia, F., Powell, S.N., Iliakis, G. Non-homologous end-Joining of ionizing radiation-induced DNA double strand breaks in human tumor cells deficient in BRCA1 or BRCA2. *Cancer Res* 61:270-7, 2001

15. Willers, H., Xia, F., Powell, S.N. Recombinational DNA repair in Cancer and normal cells: the challenge of functional assay. *J Biomed Biotechnol* 2:86-93, 2002

16. Xia F. and Powell S.N. The molecular basis of radiosensitivity and chemosensitivity in the treatment of breast cancer. *Semin Radiat Oncol* 12:296-304, 2002

17. Powell S.N., Willers H., Xia F. BRCA2 keeps Rad51 in line, high-fidelity homologous recombination prevents breast and ovarian cancer? *Molecular Cell* 10:1262-3, 2002

18. Zhang, J., Willers, H., Feng, Z., Weaver, D.T., Powell, S.N., Xia, F. Chk2 phosphorylation of BRCA1 regulates DNA double-strand break repair. *Mol Cell Biol* 24:708-18, 2004

19. Feng, Z., Zhang, J., Powell, S.N., Xia, F. DNA damage induces p53-dependent BRCA1 nuclear export. *J Biol Chem* 279:28574-28584, 2004

20. Zhuang, J., Zhang, J, Willers, H., van Gent, D., Chung, J., Hallahan, D.E., Powell, S.N., Xia, F. "Chk2-mediated phosphorylation of BRCA1 regulates the fidelity of non-homologous end-joining." *Cancer Res* 66(3),1401-1408, 2006

21. Yan J, Kim YS, Yang XP, Li LP, Liao G, Xia F, Jetten AM. "The Ubiquitin-Interacting Motif Containing Protein RAP80 Interacts with BRCA1 and Functions in DNA Damage Repair Response." *Cancer Res* 67(14):6647-56, 2007.

22. Shinohara, E., Wang, H., and Xia, F. "The role of sub-cellular location in the regulation of BRCA1 function" *Res. Adv. in Cancer*, 7:139-150, 2007