

## CURRICULUM VITAE

**Name:** Keisuke Shirai, M.D.

**Office:** Hematology/Oncology Division (843) 792-4271  
Medical University of South Carolina  
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Mail Stop 6350  
Charleston, SC 29425

### **EDUCATION:**

Kyoto University  
Faculty of Medicine  
Kyoto, Japan  
1991 – 1997 (M.D. March 1997)

United States Naval Hospital in Yokosuka  
(Equivalent to Transitional year Program in U.S.A.)  
Yokosuka, Japan  
Internship  
April 1997 – April 1998

Aso Lizuka Hospital  
Department of Internal Medicine  
Fukuoka, Japan  
Resident (Valedictorian)  
April 1998 – April 2000

Hokkaido Cancer Center: National Sapporo Hospital  
Department of Radiation Oncology  
Hokkaido, Japan  
Resident/Staff  
May 2000 – June 2002

University of Pittsburgh Medical Center  
Department of Internal Medicine  
Shadyside Hospital  
Residency  
July 2002 – June 2005

Medical University of South Carolina  
Division of Hematology/Oncology  
Department of Internal Medicine  
Fellowship  
July 2005 – June 2008

Medical University of South Carolina  
Master of Science Clinical Research Candidate  
June 2008 – June 2009

**FACULTY APPOINTMENTS:**

Assistant Professor of Medicine  
Medical University of South Carolina  
Hematology/Oncology Division  
Department of Internal Medicine  
Charleston, SC  
July 2008 – Present

**CLINICAL CLERKSHIPS and OTHER MEDICAL EXPERIENCE:**

Clinical clerkship at Sutter Medical Center of Santa Rosa  
Santa Rosa, California  
2 weeks, November 1999

Clinical clerkship in Cardiac Surgery Austin Hospital and University of Melbourne  
Melbourne, Australia  
4 weeks, October 1997

Medical volunteer to research epidemiology of iodine deficiency goiter  
Pakistan  
3 weeks, March 1996

Clinical clerkship at the MedSport Center, University of Michigan  
Ann Arbor, Michigan  
4 weeks, summer 1994

Clinical clerkship in Family Practice, University of Iowa  
Iowa City, Iowa  
3 weeks, summer 1994

**SPECIALTY/BOARD CERTIFICATION:**

United States Medical License Exam Step 1	October 1997
United States Medical License Exam Step 2	March 1997
United States Medical License Exam Step 3	December 2002
ECFMG Certificate	Valid Indefinitely
Step 1 of Board Exam for Radiation Oncology in Japan	September 2001
American Board of Internal Medicine, Internal Medicine	Valid through 2015
American Board of Internal Medicine, Medical Oncology	Valid through 2018
Eligible for American Board of Internal Medicine, Hematology (exam to be taken Nov 2009)	

**LICENSURE:**           Japan                   1997  
                          South Carolina       July 2005

**MEMBERSHIPS IN PROFESSIONAL SOCIETIES:**

American Society of Clinical Oncology (ASCO) since 2005  
American Society of Hematology (ASH) since 2005  
American Society for Therapeutic Radiology and Oncology (ASTRO) since 2008  
South West Oncology Group (SWOG) since 2008  
South West Oncology Group (SWOG) Lung Cancer Committee since 2009  
Japanese Society of Therapeutic Radiation Oncology (JASTRO) since 2000  
Japan Radiological Society since 1999  
Japanese Society of Internal Medicine since 1998

**COMMITTEE MEMBERSHIPS:**

Member, Data Safety Monitoring Committee  
Hollings Cancer Center  
Medical University of South Carolina

Member, Protocol Review Committee  
Hollings Cancer Center  
Medical University of South Carolina

**AWARDS, HONORS, MEMBERSHIP IN HONORARY SOCIETIES:**

American Association for Cancer Research (AACR) Workshop  
Molecular Biology in Clinical Oncology  
Aspen CO  
June 30 – July 7, 2007 (attended on scholarship)

2007 AACR/ASCO Workshop:  
Methods in Clinical Cancer Research  
Vail, CO  
July 28 – August 3, 2007 (attended on scholarship)

Japan-North America Medical Exchange Foundation: Scholarship, 2000  
Valedictorian, Residency Training  
Department of Internal Medicine  
Aso Lizuka Hospital  
Fukuoka, Japan  
April 2000

## **MAJOR CLINICAL INTERESTS AND RESPONSIBILITIES:**

Head and Neck Cancer  
Lung Cancer  
Palliative Care

## **CURRENT RESEARCH AND OTHER PROJECTS:**

- 1) To investigate the effects of ceramide and sphingosine analogues under sk1 down-regulation in 4-NQO-induced Head and Neck cancer. Under Drs. Besim Ogretmen and Toshihiko Kawamori, Dept. of Pathology, Medical University of South Carolina, since 05/2006.
- 2) To reveal whether fibrocytes (precursors of fibroblasts) are originated from hematopoietic stem cells or mesenchymal stem cells. Under Drs. Makio Ogawa (Dept. of Experimental Hematology) and Dr. John Lazarchick (Dept. of Pathology), Medical University of South Carolina, since 2006.
- 3) Adult hemophagocytic lymphohistiocytosis: clinical presentation and follow-up in a consecutive series of patients. Under Dr. John Lazarchick, Dept. of Pathology, Medical University of South Carolina, since 2005.

## **LECTURES AND PRESENTATIONS:**

1. Palliative Care and Hospice. Toyota Memorial Hospital in Japan as an invited speaker. August 2007.
2. Chemotherapy in the United States. Invited speaker for symposium. The 47<sup>th</sup> Annual Meeting of the Japan Lung Cancer Society, Kyoto, Japan. December 2006.
3. The difference in Japanese and American residency training. Sapporo Medical University in Japan as an invited speaker. June 2006.

## **PUBLICATIONS:**

### **Accepted Manuscripts**

1. **Shirai K.** A resident's life in America: an essay as a monthly serial. *Medicina* (in Japanese), continuously since January 2006.
2. Watkins JM, **Shirai K**, Herrin AE, Stuart RK, Chaudhary UB, Garrett-Mayer E, Day TA, Gillespie MB, Sharma AK. Toxicity and survival outcomes of hyperfractionated re-irradiation split-course radiotherapy and concurrent chemotherapy in loco-regionally recurrent previously irradiated head and neck cancers. *Head Neck*. 2009 Jan 20.
3. Watkins JM, Wahlquist AE, **Shirai KS**, Garrett-Mayer E, Aguero EG, Fortney JA, Sherman CA, Sharma AK. Factors associated with severe acute esophagitis from

hyperfractionated radiotherapy with concurrent chemotherapy for limited-stage small-cell lung cancer. *Int J Radiat Oncol Biol Phys*. 2008 Dec 10.

4. **Shirai K**, O'Brien P. Molecular targets in squamous cell carcinoma of the head and neck. *Curr Treat Options Oncol*. 2007 Jun;8(3):239-51.
5. **Shirai K**, Chaudhary U. Use of low molecular weight heparin and aminocaproic acid in chronic DIC associated with prostate cancer: a case report. *The Scientific World Urology*, (2007) 2, 27-29.
6. Herrem CJ, Tatsumi T, Olson KS, **Shirai K**, Finke JH, Bukowski RM, Zhou M, Richmond AL, Derweesh I, Kinch MS, Storkus WJ. Expression of EphA2 is prognostic of disease-free interval and overall survival in surgically treated patients with renal cell carcinoma. *Clin Cancer Res*. 2005 Jan 1;11(1):226-31.
7. **Shirai K**. How to share your precious experiences. *Nihon Igakukai Shinbun* vol 18 (5) Jun 2003.
8. **Shirai K**. Tips to be a good learner and a great teacher. *Nihon Igakukai Shinbun* vol 18 (10) Oct 2003.
9. Nishio M, Myoujin M, Nishiyama N, **Shirai K**. Radiotherapy for Superficial Esophageal Cancer (review). *Clinical Surgery* 57(2):153-159 2002.
10. Myoujin M, Nishio M, Nishiyama N, **Shirai K**, Tanaka K. Phase II trial: Concurrent chemoradiation with cisplatin for larynx preservation. *Head and Neck Cancer* 28:231-236, 2002.
11. Nishiyama N, Nishio M, Myoujin M, **Shirai K**. The progress of radiation therapy for laryngeal cancer (review). *Journal of Otolaryngology, Head and Neck Surgery* 18(4):781-787 2002.

### **Book/Book Chapters**

**Shirai K**, Sherman C. Systemic chemotherapy for lung cancer. [In Press] Book chapter for "Lung cancer imaging".

### **Manuscripts Under Review**

1. **Shirai K**, Green M. The state of art: Lung cancer treatment. [Under Revision] *Oncology*.
2. **Shirai K**, Sera Y, Bulkeley W, Mehrotra M, Moussa O, LaRue AC, Watson DK, Stuart RK, Lazarchick J, Ogawa M. Hematopoietic stem cell origin of human fibroblasts: cell culture studies of female recipients of gender mismatch stem cell transplantation and a patient with chronic myelogenous leukemia. [Under Revision] *Experimental Hematology*.
3. Watkins JM, Zauls AJ, Wahlquist AH, **Shirai K**, Garrett-Mayer E, Gillespie MB, Day TA, Sharma AK. Low-dose weekly platinum-based chemoradiation for advanced head/neck cancer. [Under Review] Manuscript submitted to *Laryngoscope*, 4 Feb

2009.

4. Watkins JM, Ruppert BN, Wahlquist AE, **Shirai K**, Harper JL, Garrett-Mayer E, Sherman CA, Silvestri GA, Aguero EG, Reed CE, Sharma AK. Toxicity, response rates, and survival outcomes of induction cisplatin and irinotecan followed by concurrent cisplatin, irinotecan, and radiotherapy for locally advanced esophageal cancer. [Under Review] Manuscript submitted to *Clin Oncol*, 9 Oct 2008.

### Ongoing Projects

1. Watkins JM, **Shirai K**, Wahlquist AH, Fortney JA, Kearney PL, Garrett-Mayer E, Gillespie MB, Hornig JD, Day TA, Sharma AK. Complications, survival, and patterns of failure after salvage resection for isolated local and/or regional failure of head/neck cancer following definitive concurrent chemoradiotherapy. [Manuscript under co-author review for submission to *Arch Otolaryngol-Head Neck Surg*.]
2. Watkins JM, Fortney JA, Wahlquist AH, **Shirai K**, Garrett-Mayer E, Aguero EG, Sherman CA, Turrisi AT, Sharma AK. Once-daily radiotherapy to  $\geq 59.4$  Gy versus twice-daily radiotherapy to  $\geq 45$  Gy with concurrent chemotherapy for limited-stage small-cell lung cancer: a comparative analysis of toxicities and outcomes. [Manuscript under co-author review for submission to *Lung Cancer*.]
3. Watkins JM, Zauls AJ, Wahlquist AE, Ruppert BN, **Shirai K**, Harper JL, Garrett-Mayer E, Sherman CA, Aguero EG, Silvestri GA, Reed CE, Sharma AK. Toxicity, response rates, and survival outcomes of induction cisplatin and irinotecan followed by concurrent cisplatin, irinotecan, and radiotherapy for locally advanced esophageal cancer. [Manuscript under co-author review for submission to *Int J Clin Oncol*.]

### Oral Presentations

1. Zauls AJ, Fortney JA, Watkins JM, **Shirai K**, Wahlquist AE, Garrett-Mayer E, Gillespie MB, Day TA, O'Brien PE, Sharma AK. Definitive concurrent chemoradiotherapy (CRT) for loco-regionally advanced head/neck cancers (HNC): a comparative analysis of weekly low-dose (Qwk) versus every 3-week full-dose (Q3wk) platinum regimens in 136 patients. [Abstract accepted to the 91st Annual Meeting of the American Radium Society, Vancouver, BC, April, 2009.]
2. **Shirai K**. Multidisciplinary approach for lung cancer. Internal Medicine Grand Rounds, Medical University of South Carolina, January 6, 2009.
3. **Shirai K**. How to run a multidisciplinary Tumor Board. Special Invited speaker for symposium: **The 21st Annual Meeting of the Japanese Society of Therapeutic Radiation Oncology**, Sapporo, Japan, October 17 2008.
4. **Shirai K**. Palliative care in the United States. Invited speaker. St.Luke's International Hospital, Tokyo, Japan, August 2008.
5. **Shirai K**. What is palliative care mind? Invited speaker. Kyoto University, Kyoto, Japan, July 30, 2008.

6. **Shirai K.** Oncology training in the United States. Invited speaker for special seminar. Tokyo University, Tokyo, Japan, July 11, 2008.
7. **Shirai K.** When and how to stop life support measures. Invited speaker for special seminar. Omiya Medical Center, Saitama, Japan, July 2008.
8. **Shirai K.** How to maintain hope. Invited speaker for special seminar. Aso Iizuka Hospital, Fukuoka, Japan, June 2008.
9. **Shirai K.** The way to become a well-rounded oncologist. Special Invited speaker for symposium: **The 43rd Annual Meeting of the Japan Radiology Society**, Yokohama, Japan, April 5, 2008.
10. **Shirai K.** Palliative care and Hospice. Invited speaker for special seminar. Toyota Memorial Hospital, Aichi, Japan, August 2007.
11. **Shirai K.** What is palliative care? Invited speaker for special seminar. Imamura Memorial Hospital, Kagoshima, Japan, August 2007.
12. **Shirai K.** Salivary Gland Tumors. Medical University of South Carolina Hematology/Oncology Fellowship Program Core Curriculum Seminar Series, 2007.
13. **Shirai K.** Non Small Cell Lung Cancer. Medical University of South Carolina Hematology/Oncology Fellowship Program Core Curriculum Seminar Series, 2007.
14. **Shirai K.** Prostate Cancer. Medical University of South Carolina Hematology/Oncology Fellowship Program Core Curriculum Seminar Series. 2007.
15. **Shirai K.** Chemotherapy in the United States. Special Invited speaker for public symposium: **The 47<sup>th</sup> Annual Meeting of the Japan Lung Cancer Society, Kyoto, Japan**, December 2006.
16. **Shirai K.** How to survive residency. Invited speaker. Toyota Memorial Hospital, Aichi, Japan, June 2006.
17. **Shirai K.** The difference in Japanese and American residency training. Invited speaker. Sapporo Medical University, Sapporo, June 2006.
18. **Shirai K.** Brain metastasis. Medical University of South Carolina Hematology/Oncology Fellowship Program Core Curriculum Seminar Series, May 2006.
19. **Shirai K.** Head and Neck Cancer. Medical University of South Carolina Hematology/Oncology Fellowship Program Core Curriculum Seminar Series, November 2005.
20. **Shirai K, Nishio M, Myoujin M, Nishiyama N.** The role and feasibility of salvage

surgery for persistent tumor or local recurrence after definitive radiotherapy for esophageal cancer. (Accepted as oral presentation). Radiology Society of North America, Chicago, IL, November 2001.

21. **Shirai K**, Nishio M, Myoujin M, Nishiyama N, Yonesaka A. Concurrent chemoradiation for esophageal cancer. The 14th Annual Meeting of JASTRO, Osaka, Japan, November 2001.
22. **Shirai K**, Nishio M, Myoujin M, Nishiyama N, Yonesaka A. Review of 79 cases of lung cancer achieving 5-year survival. The 60th Annual Meeting of Japan Radiological Society, Kobe, Japan, April 2001.
23. **Shirai K**, Nishio M, Myoujin M, Nishiyama N, Yonesaka A. 43 cases of esophageal cancer salvaged by surgery after full-dose radical radiotherapy. The 55th Esophageal Disease Conference, Tokyo, Japan, July 2001.
24. **Shirai K**, Nishio M, Myoujin M, Nishiyama N, Yonesaka A. The Role of Au-grain in the treatment of oropharyngeal cancer. The 13th Annual Meeting of the Japanese Society of Therapeutic Radiation Oncology, Nigata, Japan, November 2000.
25. **Shirai K**, Kiyota M, Kozuru M. Unilateral pulmonary congestion accompanied by severe hyponatremia. The 243rd Meeting of the Japan Internal Medicine Society, Fukuoka, Japan October 1998.
26. **Shirai K**, Ayukawa K, Kozuru M. Severe hypoglycemia and heart failure. The 3rd Meeting of the Japan Emergency Medicine Society, Kagoshima, Japan, April 1999.

### Poster Presentations

1. Watkins JM, **Shirai K**, Fortney JA, Herrin AE, Garrett-Mayer E, Day TA, Gillespie MB, Sharma AK. Survival and patterns of failure of salvage resection for isolated local and/or regional failure of head/neck cancer following definitive concurrent chemoradiotherapy. Radiologic Society of North America Annual Meeting, Chicago, IL, November, 2008.
2. **Shirai K**, Watkins JM, Wahlquist AE, Garrett-Mayer E, Aguero EG, Sherman CA, Sharma AK. Impact of treatment duration and delays on in-field disease control for twice-daily radiotherapy (BID-RT) with concurrent chemotherapy in limited-stage small-cell lung cancer (SCLC). Poster discussion at the 50<sup>th</sup> Annual Meeting of the American Society for Therapeutic Radiology and Oncology, Boston, MA, September 23, 2008.
3. **Shirai K**, Chaudhary U, O'Brien P, Afrin LB, Gillespie MB, Day TA, Sharma AK, Wilhoit C, Saddoughi S, Senkal CE, Hannun YA, and Ogretmen B. Clinical phase II trial for the treatment of recurrent head and neck cancers with gemcitabine and doxorubicin combination: from the sphingolipid-signaling bench to the bedside. The 7<sup>th</sup> International Conference on Head and Neck Cancer, San Francisco, California, July 21, 2008.

4. Watkins JM, Herrin AE, **Shirai K**, Garrett-Mayer E, Stuart RK, Gillespie MB, Day TA, Sharma AK. Low-dose weekly platinum-based chemotherapy with concurrent radiotherapy (CRT) for locally advanced head/neck cancer (LAHNC). The 7<sup>th</sup> International Conference on Head and Neck Cancer, San Francisco, California, July 19, 2008.
5. Watkins JM, **Shirai K**, Herrin AE, Sherman C, Aguero EG, Fortney JA, Garrett-Mayer E, Sharma AK. Predictive factors for pneumonitis and esophagitis in limited small-cell lung cancer patients treated with twice-daily radiotherapy. The 90<sup>th</sup> Annual Meeting of the American Radium Society, Laguna Niguel, California, May 3, 2008.
6. Fortney JA, Watkins JM, **Shirai K**, Herrin AE, Sherman C, Aguero EG, Garrett-Mayer E, Sharma AK. Survival comparison of dose-optimized once versus twice-daily radiotherapy with concurrent chemotherapy for limited stage small-cell lung cancer. The 90<sup>th</sup> Annual Meeting of the American Radium Society, Laguna Niguel, California, May 3, 2008.
7. Watkins JM, Sharma AK, **Shirai K**, Sinha D, Day TA, Gillespie MB, O'Brien PE. Re-irradiation (ReRT) of head and neck cancer (HNCa) using twice-daily split-course fractionation (BID-SC) with concurrent chemotherapy: the Medical University of Carolina (MUSC) Experience. The 93<sup>rd</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, November 25, 2007.
8. Watkins JM, **Shirai K**, Crowley M, Day TA, Gillespie MB, Chaudhary UB, Sinha D, Sharma AK. Definitive concurrent chemoradiotherapy (CCRT) to 70 Gy with weekly cisplatin and paclitaxel (CP) in the treatment of locally advanced head and neck cancer (LAHNC). The 89<sup>th</sup> Annual Meeting of the American Radium Society, Amsterdam, Netherlands, May 5, 2007.

### **MENTORING:**

Watkins JM (2008 – 2009): supervised data extraction and analysis for head/neck, lung, and esophageal cancer projects, resulting in manuscript's co-authorship and presentation abstracts. (Radiation Oncology residency in progress)

Verma N (2007 – 2009): supervised head/neck cancer projects, and grants development, resulting in two grant submissions. (Hematology / Oncology fellowship in progress)

Wells JL (2008 – 2009): supervised data extraction and analysis for head/neck cancer projects, and manuscript development. (Hematology / Oncology fellowship in progress)