

Curriculum Vitae

Lili Chen, PhD

Radiation Oncology Department
Fox Chase Cancer Center
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Work Experience and Academic Appointments

9/2001-Present Medical Physicist, Associate Member
Department of Radiation Oncology, Fox Chase Cancer
Center, PA, USA

12/1999 – 8/2001 Research Associate (staff member)
Department of Radiology, Stanford University, CA, USA

12/1997 – 11/1999 Postdoctoral Fellow
Department of Radiology, Stanford University, CA, USA

04/1996 – 06/1997 Postdoctoral Fellow
Department of Medical Biophysics
Sunnybrook Hospital, University of Toronto, Toronto,
Canada

07/1994 – 03/1996 Postdoctoral Fellow
Med. Phys. Dept., Carleton Univ./Civic Cancer Ctr, Ottawa,
Canada

03/1990 – 09/1990 Academic Visitor
Physics Dept., Royal Marsden Hospital, Sutton, U.K.

11/1989 – 01/1990 Clinical Observer
Department of Ophthalmology, St. George's Hospital,
London, U.K.

07/1986 – 07/1987 Chief Resident
Ophthalmology Dept., The Sixth People's Hospital,
Shanghai, China

02/1983 – 07/1989 Resident
Ophthalmology Dept, The Sixth People's Hospital, Shanghai,
China

02/1982 – 02/1983 Intern
Ophthalmology Dept, The Sixth People's Hospital, Shanghai,
China

Education and Training

12/1997 – 11/31/99 Postdoctoral Fellow
Department of Radiology, Stanford University, CA, USA

04/1996 – 06/1997 Postdoctoral Fellow
Department of Medical Biophysics, University of Toronto and
Sunnybrook Hospital, Toronto, Canada

07/1994 – 03/1996 Postdoctoral Fellow
Physics Dept., Carleton University, Ottawa, Canada

10/1990 – 03/1994 Ph.D. in Medical Physics and Biophysics

Physics Dept., Royal Marsden Hosp/Institute of Cancer
Research,
University of London, London, U.K.
03/1978 – 02/1982 M.D., Medical University of Shanghai, Shanghai, China

Additional Courses and Training

1. Summer School on Therapeutic Ultrasound. Cargese, France April, 10th-13th, 2007
2. ISMRM workshop on MR of Cancer: Frontiers in Metabolic, Molecular, and Clinical Imaging. PA, USA October 13-16, 2006
3. The Responsible Conduct of Research. Stanford University, School of Medicine, CA, USA, Jan.6– Feb. 24 1999
4. Current Concepts of Magnetic Resonance Monterey, California, USA, November 1-5, 1998
5. Lab Training Safety Seminar. Stanford University, School of Medicine, CA, USA, 1998
6. Animal Welfare Course (scientific procedures). Home Office, UK, 1990
7. Cytology Training Course. Department of Ophthalmology, Wu Han Univ., China, 10 days, 1986

Awards

1. The LAP Award of excellence for the best radiation oncology article, ACMP (2005)
Co-author, “Stereotactic IMRT for prostate cancer: Dosimetric impact of multileaf collimator leaf width in the treatment of prostate cancer with IMRT”
2. Best paper award (North America) ESUR-SUR combined scientific sessions, Genoa, Italy, June 14-20, (2002) Co-author, “MRI-Guided in vivo Evaluation of High-power Catheter-based Ultrasonic Applicators Designed for Prostate Tissue Ablation”
3. Travel Award, Katherine McCormick Fund for Women. Stanford University School of Medicine, Stanford University, CA (1999).
4. First Prize, Patient history (chart) competition among medical residents in Shanghai, Department of Health, Shanghai, China (1987)
5. First Prize, Patient history (chart) competition among medical residents, The Sixth People’s Hospital Shanghai, China (1987)

Grants

1. PI, Focused Ultrasound Surgery Foundation Award, 2008-2009 (\$102,970.00)
2. PI, DOD Idea Development Award, PC073127, 2008-2011 (\$641,250.00)
3. PI, DOD Young Investigator Award, PC030800, 2004-2008 (\$385,000.00)
4. PI, Philips Medical Systems 2003-2004 (\$30,000.00)
5. PI, Young Investigator Award, Department of Health, Shanghai, China, 1987 (¥ 1000.00)

Review Activities

Review grants for

1. CMCRT (Center for Medical Countermeasures against Radiological Terrorism) pilot research grant, Medical College of Wisconsin, 2007

Review manuscripts for

1. *Ultrasound in Medicine and Biology* (since 1998)
2. *Journal of Magnetic Resonance Imaging* (since 1999)
3. *Medical & Engineering & Computing* (since 2001)
4. *Acta Neurochirurgica (The European Journal of Neurosurgery)* (since 2004)
5. *Physics in Medicine and Biology* (since 2005)
6. *Radiotherapy and Oncology* (since 2007)

Review meeting abstracts for

1. AAPM (American Association of Physicists in Medicine) (since 2006)
2. ISMRM (International Society for Magnetic Resonance in Medicine) (since 2006)

Professional Societies and Committee Appointments

1. Full member, AAPM (since 1999)
2. Full member, ISMRM (since 2001)
3. Full member, Delaware Valley Chapter (DVC), AAPM (since 2001)
4. Associate member, ASTRO (since 2003)
5. Treasurer, DVC, AAPM (2008-2009)
6. Member, Organizing Committee of DVC 2008 Spring Symposium (2008)
7. Session chair, AAPM 2006 annual meeting, Orlando, FL (2006)

Medical Physics Teaching and Training Activities

Lecture topics for radiation oncology residents and medical physics residents at FCCC:

1. Photons and X-rays (equivalent square, MU calculation, SAD technique) 2002-present
2. Photons and X-rays (MU calculation, SSD technique) 2002-present
3. Imaging for radiation oncology (CT, MR and PET) 2002-present
4. Hyperthermia (bio-heat equation, thermometry, HIFU) 2006-present

Clinical rotation special topics for medical physics residents at FCCC:

1. RT simulation and setup (CT, MRI, PET, BAT) 2002-present
2. Linacs QA procedures (monthly, annual) 2002-present
3. Chart check (MU calculation) 2002-present

Faculty on FCCC annual short course on IMRT:

1. MRI-based treatment planning for IMRT 2003-2005

Clinical Radiation Physics Activities

Routine radiation physics services and support at FCCC:

1. Linacs QA (monthly and annual, RPC TLD calibration)
2. Treatment plan evaluation/chart checks (initial and weekly)
3. IMRT planning (planned for 385 IMRT patients)
4. IMRT QA analysis and chart preparation
5. Routine clinical support (daily and emergency)

Special clinical physics projects at FCCC:

1. MRI and its clinical applications (team leader)
2. High intensity focused ultrasound (HIFU) and its applications (team leader)

3. MRS and its applications (Backup for Dr. M Hossain)
4. Prostate IMRT (back up for Dr. RA Price)

Clinical physics research and development at FCCC:

1. Implementation of MRI-based treatment planning for 3DCRT and IMRT (project leader)
2. MRS applications for radiotherapy (team member)
3. MR-guided HIFU for cancer surgery/therapy (project leader)
4. MR-guided HIFU to enhance drug delivery (project leader)
5. Implementation of AAPM TG51 dosimetry calibration (with Dr. L Wang)
6. Implementation of electron beams for Varian linacs (V5/V6) (project leader)
7. Improvement of morning linac QA (warm-up procedure using profiler) (project leader)

Mentorship

Mentor

1. Anne Wallentine (2007-2008), summer student, HHMI/CURE Student Scientist Program with FCCC
2. Élan Jones (2004-2005), summer student, HHMI/CURE Student Scientist Program with FCCC, Currently an undergraduate at Trinity College, Hartford, CN
3. Nguyen Thai-Binh B.S. (2003-2004), summer student, Polytechnic France. Currently a Ph.D. student at Medical Physics Department, Cambridge University, Cambridge, UK

Clinical mentor

1. Xiu Xu B.S. (2006-2007), dosimetry assistant (volunteer) of Radiation Oncology Dept., FCCC
2. Lihong Qin Ph.D. (2002-2005), postdoctoral research associate/medical physics resident of Radiation Oncology Dept., FCCC, Currently an assistant professor at Radiation Oncology Dept., University of Minnesota, Minneapolis, MN
3. Jennifer Zhu M.S. (2004-2005), medical physics trainee (volunteer) of Radiation Oncology Dept., FCCC, Currently a ABR board certified radiation physicist at Memorial Hospital Burlington, NJ

Postdoc Supervisor

1. Jay Chen Ph.D. (2004-2006), postdoctoral research associate/medical physics resident of Radiation Oncology Dept., FCCC, Currently a radiation physicist at Department of Radiation Oncology Karmanos Cancer Center/Weisberg Cancer Center, Farmington Hills, MI
2. Qianyi Xu Ph.D. (2006-2009), postdoctoral research associate/medical physics resident of Radiation Oncology Dept., FCCC

Publications

Point/Counterpoint:

Pan T, **Chen L** and Orton CG. PET/CT will become standard practice for radiotherapy simulation and planning. Med. Phys. 35 (9) September 2008 in press

First/Senior author:

1. **Chen L**, Rivens I, ter Haar G, Riddler S, Hill C R and Bensted J P M. Histological changes in rat liver tumours treated with high-intensity focused ultrasound. *Ultrasound Med. Biol.* 19: 67 – 74, 1993.
2. **Chen L**, ter Haar G, Hill C R, Dworkin M D, Carnochan P, Young H and Bensted J P M. Effect of blood flow perfusion on the ablation of liver parenchyma with high-intensity focused ultrasound. *Phys. Med. Biol.* 38:1661 – 73, 1993.
3. **Chen L**, ter Haar G and Hill C R. Influence of ablated tissue on the formation of high-intensity focused ultrasound lesions. *Ultrasound Med. Biol.* 23:921-931, 1997.
4. **Chen L**, ter Haar G, Hill C R, Eccles S A, Box G and Bensted J P M. Treatment of implanted rat liver tumors with high-intensity focused ultrasound. *Ultrasound Med. Biol.* 24: 1475-88, 1998.
5. **Chen L**, ter Haar G, Bensted J P M and Hill C R. Histological study of normal liver and tumour bearing treated with focused ultrasound *Ultrasound Med. Biol.* 25: 847-856, 1999.
6. **Chen L**, Bouley D, Yuh E, D'Arceuil H, Butts K. Study of focused ultrasound tissue damage using MRI and histology. *Journal of Magnetic Resonance Imaging.* 10:146-153, 1999.
7. **Chen L**, Bouley D, Harris B, Butts K. MRI study of immediate cell viability in focused ultrasound lesions in the rabbit brain. *Journal of Magnetic Resonance Imaging.* 13:23-30, 2001.
8. **Chen L, Wansapura J P, Heit G, Butts K. Study of Laser Ablation in the Rabbit Brain in vivo with MR Thermometry. Journal of Magnetic Resonance Imaging 16: 147-152, 2002**
9. **Chen L**, Price RA Jr., Wang L, Li JS, Qin L, Ding M, Palacio E, T-B Nguyen, Ma C-M, Pollack A. Dosimetric evaluation of MRI-based treatment planning for prostate cancer. *Phys. Med. Biol.* 49: 5157-5170 (2004).
10. **Chen L**, Price RA Jr., Wang L, Li JS, Qin L, Shawn M, Ma C-M, Freedman GM and Pollack A. MRI-Based Treatment Planning for Radiotherapy: Dosimetric Verification for Prostate IMRT. *International Journal of Radiation Oncology Biology Physics* 60(2): 636-47 (2004)
11. **Chen L**, Li JS, Price RA et al. Investigation of MR-Based Treatment Planning for Lung and Head & Neck using Monte Carlo Simulations *The XIVth Internatinal Conference on the use of Computers in Radiation Therapy* 520-523, 2004
12. **Chen L**. Magnetic resonance has proven useful in radiation therapy simulation and treatment planning for prostate intensity-modulated radiation therapy *Advance for Imaging and Oncology* 14 57-58 (2004)
13. Chen Z, Ma C-M, Paskalev K, Li J, Yang J, Richardson T, Palacio L, Xu X and **Chen L**. Investigation of MR Image Distortion for Radiotherapy Treatment Planning of Prostate Cancer. *Phys. Med. Biol* 51 1393-1403 (2006)
14. **Chen L**, Nguyen T-B, Jones E, Chen Z, Luo W, Wang L, Price RA, Pollack A and Ma C-M. MRI-Based Treatment Planning for Prostate IMRT: Creation of Digitally Reconstructed Radiographs (DRR). *International Journal of Radiation Oncology Biology Physics* 68:(3): 903-11 (2007)
15. Chen Z, Ma C-M, Yang J, Li J, Luo W, Fan J, Paskalev KA, A. Price Jr A Chen Y and **Chen L**, Monte Carlo dose verification of MR image based

IMRT treatment planning for prostate cancer, Proc. of the 15th International Conference on the Use of Computer in Radiation Therapy (ICCR), Eds: Jean-Pierre Bissonnette (Novel Digital Publishing, Oakville), 2007, Volume II: 267-71

16. **Chen L**, Paskalev K, Zhu J, Xu X, Wang L, Price R, Horwitz E, Feigenberg S, Pollack A, Ma C-M. Image Guided Radiation Therapy for Prostate IMRT: Daily Rectal Dose Variations During the Treatment Course, Proc. of the 15th International Conference on the Use of Computer in Radiation Therapy (ICCR), Eds: Jean-Pierre Bissonnette (Novel Digital Publishing, Oakville), 2007, Volume I: 410-414

Co-author:

17. S Chen and **L Chen**. Clinical report on Laurence-moon-biedl syndrome. *Shanghai Medical Journal* (in Chinese). 5: 253, 1982
18. S Xu, **L Chen**, X Pan and S Lu, Relation between ametropia and serum ion concentration. *Journal of Ophthalmology* (in Chinese). 4: 68 – 70, 1987.
19. ter Haar G, Rivens I, **Chen L** and Riddler S. High-intensity focused ultrasound for the treatment of rat tumors. *Phys. Med. Biol.* 36: 1495 – 501, 1991.
20. ter Haar G, Clarke R L, Vaughan M G, Rivens I, **Chen L**, Loverock P H and Hill C R. Laboratory investigation of rapid tissue heating by focused ultrasound beams. *Ultrasonics* 30:116 – 117, 1992.
21. Rowland I, Rivens I, **Chen L**, Collins C D, ter Haar G and Leach M. MRI appearance of ablated rat Liver tumors following high-intensity ultrasound therapy. *BJR* 70:147-153, 1997.
22. Graham S J, **Chen L**, Leitch M, Peter R D, Bronskill M J, Foster F S, Henkelman R M, Plewes D B Quantifying tissue damage due to focused ultrasound heating observed by MRI. *Magnetic Resonance in Medicine*. 41: 321-328, 1999.
23. Ma CM, Li JS, **Chen L**, Wang L, Price R, McNeeley S, Ding M and Fourkal E, Monte Carlo dose verification for advanced radiotherapy treatment techniques, *Radiotherapy and Oncology*, 64: s105-106, 2002
24. Ma CM, Pawlicki T, Li JS, Deng J, Lee MC, Kapur A, Price RA, McNeeley S, **Chen L**, Fourkal E and Ding M, Accurate Dosimetry for Intensity Modulated Radiation Therapy, in *Accurate Dosimetry for Radiation Dosimetry*, Ed. J Seuntjens and P Mobit (Med. Phys. Publishing, Madison, 2002) 249-267.
25. Ma CM, Price RA, McNeeley S, **Chen L**, et al, Clinical Implementation and Quality Assurance for Intensity Modulated Radiation Therapy, in Proc. International Symposium On Standards And Codes Of Practice In Medical Radiation Dosimetry (IAEA: Vienna, Austria, 2002) IAEA-CA-96-120
26. Butts k, Daniel B, **Chen L**, Bouley D, Wansapura J, Maier S, Dumoulin C, Watkins R, Diffusion-Weighted MRI after Cryosurgery of the Canine Prostate, *Journal of Magnetic Resonance Imaging* 17(1): 131-135, 2003
27. Qin L, Li JS, Price RA, **Chen L**, McNeeley S, Ding M, Fourkal E, Freedman G, Ma C.M. A Monte carlo based treatment optimization tool for modulated electron radiation therapy. Proc.of *The XIVth Internatinal Conference on the use of Computers in Radiation Therapy* (ICCR), Seoul 527-530 (2004)
28. Qin L, **Chen L**, Li JS, Price RA, Yang J, Xiong W, Ma C.M. Phase space analysis of Siemens electron beams for Monte carlo treatment planning.

Proc. of The XIVth International Conference on the use of Computers in Radiation Therapy (ICCR), Seoul 665-668 (2004)

29. Wang L, Movsas B, Jacob R, Fourkal E, **Chen L**, Price R, Feigenberg S, Konski A, Pollack A and Ma C. Stereotactic IMRT for prostate cancer: Dosimetric impact of multileaf collimator leaf width in the treatment of prostate cancer with IMRT. *Journal of Applied Clinical Medical Physics* 5: 29-41 (2004)
30. Wang L, R Jacob, **Chen L**, Feigenberg S, Konski A, Ma C and B Movsas. Stereotactic IMRT for prostate cancer: Setup accuracy of a new stereotactic body localization system. *Journal of Applied Clinical Medical Physics* 5: 18-28 (2004)
31. Xiong W, Li J, **Chen L**, Price RA, Freedman G, Ding M, Qin L, Yang J and Ma C-M. Optimization of combined electron and photon beams for breast cancer. *Phys. Med. Biol.* 49 1973-1989 (2004)
32. Li JS, Freedman GM, Price R, Wang L, Anderson P, **Chen L**, Xiong W, Yang J, Pollack A and Ma C-M. Clinical implementation of intensity-modulated tangential beam irradiation for breast cancer. *Med. Phys.* 31 (5), 1023-1031 (2004)
33. Ma CM, Price RA Jr. Li JS, **Chen L**, Wang L, Fourkal E, Qin L and Yang J. Monitor unit calculation for Monte Carlo treatment planning. *Phys. Med. Biol.* 49 1671-1687 (2004)
34. Wang L, Hoban P, Paskalev K, Yang J, Li J, **Chen L**, Xiong W, Ma CM. Dosimetric advantage and clinical implication of a micro-multileaf collimator in the treatment of prostate with intensity-modulated radiotherapy *Medical Dosimetry* 30 (2): 97-103 (2005)
35. Yuh EL, Shulman SG, Mehta SA, Xie J, **Chen L**, Frenkel V, Bednarski MD and Li KCP. Delivery of a Systemic Chemotherapeutic Agent to Tumors Using Focused Ultrasound: study in a murine model *Radiology* 234(2): 431 – 437 (2005)
36. Yang J, Li J, **Chen, L**, Price RA, McNeeley S, Qin L, Wang, L, Xiong W and Ma C-M. Monte Carlo evaluation of heterogeneity effect in IMRT treatment planning for prostate cancer *Phys. Med. Biol.* 50: 1-10 (2005)

37. Yang J, Li J, **Chen L**, Price R, McNeeley S, Qin L, Wang L, Xiong W, Ma C-M. Dosimetric verification of IMRT treatment planning using Monte Carlo simulations for prostate cancer. *Phys Med Biol.* 50(5): 869-78 (2005)
38. Fan J, Li J, **Chen L**, Stathakis S, Luo W, Du Plessis F, Xiong W, Yang J, Ma CM. A practical Monte Carlo MU verification tool for IMRT quality assurance. *Phys Med Biol* 21;51(10):2503-15 2006
39. Luo W, Li J, Price RA Jr, **Chen L**, Yang J, Fan J, Chen Z, McNeeley S, Xu X, Ma CM. Monte Carlo based IMRT dose verification using MLC log file and R/V outputs. *Med. Phys.* 33 (7): 2557-64 2006
40. Wang L, Feigenberg S, **Chen L**, Pasklev K and C-M Ma. Benefit of three-dimensional image-guided stereotactic localization in the hypofractionated treatment of lung cancer. *International Journal of Radiation Oncology Biology Physics* 66 (3): 738 – 747 (2006)
41. Wang L, Li J, Paskalev K, Hoban P, Luo W, **Chen L**, McNeeley S, Price R, Ma C. Commissioning and quality assurance of a commercial stereotactic treatment-planning system for extracranial IMRT. *Journal of Applied Clinical Medical Physics* 7: 21-34 (2006)
42. Breen Michael, Breen Miyuki, Butts K, **Chen L**, Saidel GM, Wilson DL. MRI guided thermal ablation therapy: model and parameter estimates to predict cell death from MR thermometry images. *Annals of Biomedical Engineering* 35 (8) 1391-1403 (2007)

Book Chapter

1. Y. Cao and **L. Chen**. MRI in Radiation Treatment Planning and Assessment. In: Integrating New Technologies into the Clinic: Monte Carlo and Image-Guided Radiation Therapy (ed. Bruce H. Curran, James M. Balter, and Indrin J. Chetty). Medical Physics Publishing (Madison, WI), 2006, pp401-424.

Published Abstract: 64 (available upon request)

Invited talks and Seminars:

1. “Cancer treatment with MRI-Guided High Intensity Focused Ultrasound” AAPM 49th Annual Meeting, 2007, Minneapolis Convention Center, Minneapolis, Minnesota, Symposium: alternative cancer therapy
2. “MR Guided High-Intensity Focused Ultrasound for Cancer treatment” 16th Annual Radiation Oncology Conference for nurses, therapists and dosimeters, Philadelphia, PA, 2007
3. “High Intensity Focused Ultrasound Therapy” Delaware Valley Chapter of the American Association of Physicists in Medicine Spring Symposium, Philadelphia, PA, 2005 “Advances in Imaging and Radiation Therapy”
4. “MRI for Radiation Therapy” Philips 11th Annual Oncology Symposium, Atlanta, Georgia, 2004
5. “Clinical Implementation of MRI Simulation for IMRT of Prostate Cancer” 13th Annual Radiation Oncology Conference for nurses, therapists and dosimeters, Philadelphia, PA, 2004
6. “MRI guided thermal therapy” Royal. Marsden Hosp/Institute of Cancer Research, London, U.K. 2001

7. *"Treatment of implanted rat liver tumors with focused ultrasound"*
Department of Medical Biophysics, University of Toronto, Canada. 1995

