

Robert A. Price Jr., Ph.D.
Curriculum Vitae
March 10, 2009

Education:

9/92 - 6/98

Graduate of the Medical College of Ohio, Toledo, Ohio,
Ph. D. in Medical Sciences specializing in Radiation Therapy Physics.

9/92 - 6/95

Graduate of the Medical College of Ohio, Toledo, Ohio,
M.S. degree in Biomedical Sciences specializing in Radiation Therapy Physics

8/90 - 5/92

Graduate of the University of Tennessee, Chattanooga, TN,
B.S. degree in Physics

8/85 - 8/86

Graduate of the Roanoke Memorial School of Radiation Oncologic
Technologies, Roanoke, VA

8/83 - 8/85 Graduate of the Muskingum Area Technical College, Zanesville,
OH, Associate Degree of Applied Science

9/80 - 1/83 Attended Ohio State University, Columbus, OH

Certification:

5/00

ABR Certification in Therapeutic Radiologic Physics

5/89

MDCB Certification in Medical Radiation Dosimetry

10/86

ARRT Certification in Radiation Therapy Technology

10/85

ARRT Certification in Radiography

Employment History:

6/07-present

Chief Clinical Physicist

Faculty, Member

Fox Chase Cancer Center

Department of Radiation Oncology

Philadelphia, PA

9/01-6/07

Chief Clinical Physicist

Faculty, Associate Member

Fox Chase Cancer Center

Department of Radiation Oncology

Philadelphia, PA

7/00-9/01

Acting Director of Radiation Physics
Faculty, Associate Member
Fox Chase Cancer Center
Department of Radiation Oncology
Philadelphia, PA

4/98-7/00
Medical Physicist
Head of Clinical Physics
Faculty, Associate Member
Fox Chase Cancer Center
Department of Radiation Oncology
Philadelphia, PA

7/92 – 5/98
Medical Radiation Physicist/Dosimetrist,
Medical College of Ohio, Toledo, OH

1/93 – 5/97
Instructor, Radiation Therapy Physics,
Owens Community College, Toledo, OH

7/88 - 7/92
Medical Radiation Dosimetrist/Technical Supervisor,
Memorial Hospital, H. Clay Evans Johnson Cancer Center,
Chattanooga, TN

7/87 - 7/88
Medical Radiation Dosimetrist,
Erlanger Medical Center, Chattanooga, TN

9/86 - 7/87
Staff Radiation Therapy Technologist/Radiation Dosimetrist,
Erlanger Medical Center, Chattanooga, TN

4/83 - 8/85
Orderly and BCLS Instructor,
Guernsey Memorial Hospital, Cambridge, OH

Professional Societies:

American Association of Physicists in Medicine (AAPM)
Delaware Valley Chapter of AAPM (DVCAAPM)
American Society For Therapeutic Radiology and Oncology (ASTRO)
American Association of Medical Dosimetrists (AAMD)

Committees served/ offices held:

Fox Chase Cancer Center
Performance Monitoring Committee (June 19, 2000-2005)

Medical Isotope Subcommittee (January 2001- present)
Broad Scope Radiation Safety Committee (January 2001-present)
Residency Review Committee (July 2000 – present)
Radiation Oncology Quality Assurance Committee (March 2000-Present; Vice
Chair November 2008-present)

AAPM

AAPM (CPC) Clinical Practice Committee, July 2007 – present
AAPM (PICRC) Professional Information and Clinical Relations Committee, January 1,
2005-July
2007
AAPM (RRPSR) Review of Radiation Physics Syllabi for
Residents subcommittee,
January 1, 2005-present
AAPM (TR) Medical Physics Education of Physicians committee,
January 1, 2005-present
AAPM (Chair) Physics Curriculum for Radiation Oncology Medical Residents
(PCROMR) Subcommittee of Medical Physics Education of Physicians
(MPEP); January 2007-present
AAPM Board [BRD] of Directors/Chapter Representative-Delaware Valley.
January 1, 2008-present

DVCAAPM

DVCAAPM Organizing Committee
Spring Symposium 2004
Image Guided Radiation Therapy
DVCAAPM President Elect January 1, 2005- December 31, 2005
DVCAAPM Executive Committee January 1, 2005-present
DVCAAPM Organizing Committee
Spring Symposium 2005
Advances in Imaging and Radiation Therapy
DVCAAPM President January 1, 2006- December 31, 2006
DVCAAPM Organizing Committee
Spring Symposium 2006
Advances in the physics of cancer care
DVCAAPM past-President January 1, 2007- December 31, 2007

ASTRO

ASTRO Physics Core Curriculum Subcommittee of the Radiation Physics
Committee;
February 17, 2006- present
ASTRO (Co-chair) Evaluation Subcommittee of Emerging Technologies
Committee (ETC); January 2007- present
ASTRO Emerging Technology Steering Committee of the Health Policy Council;
January 2007- present

Experience:

Clinical Radiation Oncology Physics:

From April of 1998 to the present I have functioned as head of clinical medical physics at Fox Chase Cancer Center. Additionally, I have performed the duties as acting director of medical physics from July of 2000 to September 2001. From 1992-1998 I functioned as a clinical radiation therapy physicist/medical dosimetrist at the medical college of Ohio. I participated in all aspects of clinical physics and supervised all clinical dosimetry as well as providing clinical training for graduate students in the medical physics program. In addition to my duties on the main campus I provided physics and dosimetry coverage to a satellite center in Marion, OH in 1993-1994 and provided physics and dosimetry coverage to a satellite center in Bryan, OH in 1994-1995 and 1997. From 1987-1998 I also functioned as a medical dosimetrist, participating in and/or supervising all aspects of clinical radiation therapy.

Participation in special procedures:

Stereotactic radiosurgery (linac based)

Intraoperative radiation therapy (IORT)

Brachytherapy (LDR and MDR)

High Dose Rate remote afterloading brachytherapy (HDR)

Prostate seed implants

CT guided infusional brachytherapy

Intensity Modulated Radiation Therapy (IMRT)-implementation and continued supervision

and participation

3-dimensional conformal radiation therapy (3D CRT)

Total Body Irradiation (TBI: photons)-implementation and continued supervision and

participation

Image Guided Radiation Therapy (planning and localization)

Acceptance Testing and Commissioning: (Linear Accelerators)

July 1999, **Siemens Primus**, dual photon energy, 6 electron energies, MLC, virtual wedge (satellite center)

October 1999, **Siemens Primus**, dual photon energy, 6 electron energies, MLC, virtual wedge, electronic portal imaging (FCCC)

November 1999, **Siemens Primus**, dual photon energy, 6 electron energies, MLC, virtual wedge, electronic portal imaging (FCCC)

December 1999, **Siemens Primus**, dual photon energy, 6 electron energies, MLC, virtual wedge, electronic portal imaging (FCCC)

January 2000, **Siemens Primart**, IMRT dedicated machine, MLC, virtual wedge, electronic portal imaging (FCCC)

June 2003, Varian Ex21, dual photon energy, 6 electron energies, MLC EDW, EPID (FCCC)

September 2006, Varian Trilogy, dual photon energy, 6 electron energies, MLC, EDW, EPID, OBI, Cone beam CT (FCCC)

Acceptance Testing and Commissioning: (treatment planning systems)
1998, Advanced Radiation Therapy Systems (ARTS) 3-D treatment planning system
1999, 2004 CORVUS (NOMOS Corp.) IMRT treatment planning system

Teaching:

Faculty physics lecturer for radiation oncology residents and post-doctoral physicists at Fox Chase Cancer Center from 1998 to present.

Instructor of radiation therapy physics for the Owens Community College radiation therapy technology students from 1993-1997. I have participated in the training of medical dosimetrists in the positions I have held in Tennessee, Ohio, and Pennsylvania.

ASTRO 2001 3D Conformal Radiation therapy/IMRT Practicum
Plano, TX, March 2001
IMRT planning instructor for NOMOS Corp.

ASTRO 2002 3D Conformal Radiation therapy/IMRT Practicum
St. Petersburg, FL, February 2002
IMRT planning instructor for NOMOS Corp.

Short Course on Introduction to Monte Carlo Treatment Planning
Fox Chase Cancer Center, Philadelphia, PA, April 4-6, 2002
Faculty (speaker)
(1) Monitor Unit Calculations for MCTP

Short Course on Intensity Modulated Radiation Therapy
Fox Chase Cancer Center, Philadelphia, PA, April 25-27, 2002
Course Coordinator, Faculty (speaker)
(1) Introduction to IMRT (a physicist's perspective)
(2) Guidelines for IMRT Treatment Planning
(3) Quality Assurance for IMRT
(4) Laboratory exercises

ASTRO Practicum 2003. Implementing IMRT in Clinical Practice
San Diego, CA, February 2003
IMRT planning instructor for NOMOS Corp.

Short Course on Introduction to Monte Carlo Treatment Planning
Fox Chase Cancer Center, Philadelphia, PA, April 3-5, 2003
Faculty (speaker)
(1) Monitor Unit Calculations for MCTP

Short Course on Intensity Modulated Radiation Therapy
Fox Chase Cancer Center, Philadelphia, PA, April 24-26, 2003

Course Coordinator, Faculty (speaker)

- (1) Introduction to IMRT (a physicist's perspective)
- (2) Guidelines for IMRT Treatment Planning
- (3) Quality Assurance for IMRT
- (4) Laboratory exercises

Short Course on Intensity Modulated Radiation Therapy
Fox Chase Cancer Center, Philadelphia, PA, April 22-24, 2004

Course Coordinator, Faculty (speaker)

- (1) Introduction to IMRT (a physicist's perspective)
- (2) Guidelines for IMRT Treatment Planning
- (3) Commissioning an inverse planning system
- (4) Quality Assurance for IMRT
- (5) Laboratory exercises

ASTRO Practicum-Implementing IMRT in Clinical Practice **Faculty**
Dallas, TX, February 4-6, 2005

Short Course on Introduction to Monte Carlo Treatment Planning
Fox Chase Cancer Center, Philadelphia, PA, April 7-9, 2005

Faculty (speaker)

Monitor Unit Calculations for MCTP

Short Course on Intensity Modulated Radiation Therapy
Fox Chase Cancer Center, Philadelphia, PA, April 21-23, 2005

Course Coordinator, Faculty (speaker)

- (1) Introduction to IMRT (a physicist's perspective)
- (2) Guidelines for IMRT Treatment Planning
- (3) Commissioning an inverse planning system
- (4) Quality Assurance for IMRT
- (5) Laboratory exercises

ASTRO IMRT Practicum (**Faculty**)
Dallas, TX, February 10-12, 2006

ASTRO IMRT Practicum (**Faculty**)
San Francisco, CA, February 9-11, 2007

ASTRO IMRT Practicum (**Faculty**)
Orlando, FL, February 1-3, 2008

ASTRO Advances in Technology: Practical Aspects on IMRT and
Proton Therapy Symposium (**Faculty**)
Chandler, AZ, January 22-24, 2009

Misc:

Article reviewer: Physics in Medicine and Biology
Article reviewer: Medical Physics
Article reviewer: Radiology
Article reviewer: International Journal of Radiation Oncology Biology & Physics
Article reviewer: Radiotherapy and Oncology
Article reviewer: American Journal of Clinical Oncology
Article reviewer: Journal of Applied Clinical Physics
Article reviewer: Cancer
Guest Associate Editor: Medical Physics
Abstract reviewer: AAPM annual meeting

Scientific Session Chair: AAPM annual meeting, Seattle, WA. July 26, 2005.
IMRT Verification and Quality Assurance I

Moderator, Poster Discussion Session: AAPM annual meeting,
Orlando, FL. August 1, 2006. IMRT Planning and Delivery

Ad-hoc grant reviewer, New Jersey Commission on Cancer Research Feb 2007
Organizer/Moderator, Scientific Session, AAPM annual meeting,
Minneapolis, MN. July 25, 2007. The Challenges Associated with Differential
Dose Delivery using IMRT.

Invited Speaker (international)

- 1) Quality Assurance in IMRT. **Robert A. Price Jr., Ph.D.**
Advanced Technologies in Oncology Solutions. Chinese Radiation
Oncology Society
Beijing, China, July 23, 2002
- 2) Advanced Applications of IMRT. **Robert A. Price Jr., Ph.D.**
Advanced Technologies in Oncology Solutions. Chinese Radiation
Oncology Society
Beijing, China, July 24, 2002
- 3) IMRT at Fox Chase Cancer center. **Robert A. Price Jr., Ph.D.** ESTRO
Geneva, Switzerland, September 17, 2003

Invited Speaker

- 1) Complex Treatment Planning. **Robert A. Price Jr., Ph.D.** Radiation
Oncology Conference for Nurses, Therapists, and Dosimetrists. Eighth
Annual Radiation Oncology Nursing Conference. Philadelphia, PA, May
20 – 22, 1999.
- 2) Non-coplanar Beam Arrangements for Treating Prostate Cancer with
3DCRT and IMRT- The Fox Chase Experience. **Robert A Price**

- Jr., Ph.D.** The First Community Hospital IMRT Symposium and Workshop Long Branch, NJ, September 15-16, 2000.
- 3) Intensity Modulated Radiation Therapy (IMRT). **Robert A. Price Jr., Ph.D.** Radiation Oncology Conference for Nurses, Therapists, and Dosimetrists. Tenth Anniversary Meeting Philadelphia, PA, June 7-9, 2001.
 - 4) IMRT Experience at Fox Chase Cancer Center: QA and Treatment Considerations. **Robert A. Price Jr., Ph.D.** Second Community Hospital IMRT Symposium and Workshop. Long Branch, NJ, September 28-29, 2001.
 - 5) Q.A. FOR IMRT - PRACTICAL ASPECTS. **R.A.Price, Jr., Ph.D.** DVC-AAPM - Chapter Meeting. Bodine Cancer Center Thomas Jefferson University Hospital. Philadelphia, PA, May 14, 2002.
 - 6) FCCC Physics IMRT Experiences: H&N and Issues with Treatment Time **Robert A. Price Jr., Ph.D.** Third Annual Community Hospital IMRT Symposium and Workshop. Long Branch, NJ, October 4-5, 2002.
 - 7) IMRT for Prostate Cancer (The Fast and the Furious) **Robert A. Price Jr., Ph.D.** Radiation Oncology Conference for Nurses, Therapists, and Dosimetrists. Twelfth Anniversary Meeting. Philadelphia, PA, May 22-24, 2003.
 - 8) A Segment and MU Reduction Technique for sMLC IMRT Delivery: Use Of Elongated Beamlets. **R. A. Price Jr., Ph.D.**, K. Paskalev, M.S., S.W. McNeeley, M.S., C-M. Ma, Ph.D. Fourth Annual Community Hospital IMRT Symposium and Workshop. Long Branch, NJ, November 14-15, 2003.
 - 9) The use of IMRT for the treatment of H&N cancer. **Robert A. Price Jr., Ph.D.** Radiation Oncology Conference for Nurses, Therapists, and Dosimetrists. 13th Annual Meeting. Philadelphia, PA, May 27-29, 2004.
 - 10) Toward Pelvic Nodal Irradiation for Patients Undergoing IMRT for Treatment of Prostate Cancer. **Robert A. Price Jr., Ph.D.** University of Nebraska Medical Center, Department of Radiation Oncology. November 12, 2004.
 - 11) Total Body Irradiation (TBI). **Robert A. Price Jr., Ph.D.** Radiation Oncology Conference for Nurses, Therapists, and Dosimetrists. 14th Annual meeting Philadelphia, PA, May 25-27, 2005.
 - 12) IMRT for Prostate Cancer. **Robert A. Price Jr., Ph.D.** AAPM annual meeting

Seattle, WA, July 27, 2005.

- 13) Pros and Cons of IMRT. **Robert A. Price Jr., Ph.D.** Radiation Oncology Conference for Nurses, Therapists, and Dosimetrists. 15th Annual meeting
Philadelphia, PA, May 25-27, 2006.
- 14) IMRT for Prostate Cancer. **Robert A. Price Jr., Ph.D.** AAPM annual meeting
Orlando, FL, August, 2006.
- 15) IMRT: A Review of Basic Concepts. **Robert A. Price Jr., Ph.D.** Radiation Oncology Conference for Nurses, Therapists, and Dosimetrists. 16th Annual meeting, Philadelphia, PA, May 24-26, 2007.
- 16) IMRT site specific: Prostate. **Robert A. Price Jr., Ph.D.** AAPM annual meeting, Minneapolis, MN. July 24, 2007.
- 17) Problems associated with IMRT combined with a single fraction, 4D, high dose partial prostate boost. **Price R, Ma C., Pollack A.** AAPM annual meeting, Minneapolis, MN. July 25, 2007.
- 18) IMRT for Prostate Cancer: Our Experience and Future Directions. **Robert A. Price Jr., Ph.D.** University of Pittsburg Medical Center, Pittsburg, PA. September 20, 2007.
- 19) IMRT for Prostate Cancer. **Robert A Price Jr., Ph.D.** University of California San Diego. February 15, 2008
- 20) IMRT for Prostate Cancer. **Robert A Price Jr., Ph.D.** AAPM annual meeting, Houston, TX. July 30, 2008.

Presentations:

- 1) K. Ayyangar, J. Battle, Y. Cao, M. Chan, R. Dobelbower E. Parsai, **R. Price** (speaker), A. Sen Clinical Implementation of a 3D Radiotherapy Dose Compensator Generated from CT Data Medical College of Ohio, Toledo, OH. Presented at the 54th annual meeting of the Ohio State Radiological Society, May 5-8, 1994 in Toledo, OH
- 2) K. Ayyangar (speaker), J. Battle, Y. Cao, M. Chan, R. Dobelbower E. Parsai, **R. Price**, A. Sen Comparison of 3D Planning Techniques for the Radiation Therapy Treatment of Brain Tumors - A Case Study at The Medical College Of Ohio. Medical College of Ohio, Toledo, OH. Presented at the 54th annual meeting of the Ohio State Radiological Society, May 5-8, 1994 in Toledo, OH

- 3) Komanduri Ayyangar, Joyce Battle, Yijian Cao, Maria Chan, Ralph Dobelbower, Esmail Parsai, **Robert Price** and Amarjit Sen Comparison of 3D and Other Planning Techniques Available in House for Radiation Therapy Treatment of a Brain Tumor- A Case Study Medical College of Ohio, Toledo, OH. Presented at AAPM annual meeting in Anaheim, CA, 1994
- 4) Komanduri Ayyangar, Joyce Battle, Yijian Cao, Maria Chan, Ralph Dobelbower, Esmail Parsai, **Robert Price** and Amarjit Sen Conformal Therapy for a Brain Stem Glioma Medical College of Ohio, Toledo, OH. Presented at AAPM annual meeting in Anaheim, CA, 1994
- 5) Komanduri Ayyangar, Joyce Battle, Yijian Cao, Maria Chan, Ralph Dobelbower, Esmail Parsai, **Robert Price** and Amarjit Sen Design and Implementation of a 3D dose compensator generated using CT Data in Radiotherapy of a Head and Neck Cancer Medical College of Ohio, Toledo, OH. Presented at AAPM annual meeting in Anaheim, CA, 1994
- 6) Komanduri Ayyangar, Maria Fan Chan, Yijian Cao, Amarjit Sen, Esmail Parsai, **Robert Price** and Cheng B. Saw. Experimental Electron Beam Dosimetry in the Surface for Region Cerrobend Cutouts Medical College of Ohio, Toledo, OH. West Virginia Hospitals, Morgantown, WV. Presented at AAPM annual meeting in Anaheim, CA, 1994
- 7) Komanduri Ayyangar, Maria Fan Chan, Yijian Cao, Amarjit Sen, Esmail Parsai, **Robert Price** and Cheng B. Saw. Monte Carlo Calculations of Surface Region Dose for Electron Beams in the Presence of Cerrobend Cutouts. Medical College of Ohio, Toledo, OH. West Virginia Hospitals, Morgantown, WV. Presented at AAPM annual meeting in Anaheim, CA, 1994
- 8) K.M. Ayyangar, E. Parsai, J. Battle, J. Brown, D. Carter, M.F. Chan, R.R. Dobelbower, S. Mange, S.W. McNeeley, T. Pawlicki, **R.A. Price** and A. Sen. Stereotactic Radiosurgery for Single and Multi-isocenter Treatment with Optimization and Automated Techniques. Medical College of Ohio, Toledo, OH. Presented at the 55th annual meeting of the Ohio State Radiological Society, in Cincinnati, OH May 5-7, 1995
- 9) R. R. Dobelbower, **R. A. Price**, I. Parsai, K. M. Ayyangar 3D Analysis of Treatment Techniques for Prostate Cancer Medical College of Ohio, Toledo, OH. Presented at the 55th annual meeting of the Ohio State Radiological Society, in Cincinnati, OH May 5-7, 1995
- 10) **Robert A. Price Jr.** and Komanduri M. Ayyangar The Measurement, Analysis, and Implementation of Electron Beam Data Utilized for Intraoperative Radiation Therapy at the Medical College of Ohio Medical College of Ohio, Toledo, OH Presented at the 8th annual MCO Graduate

Student Research Forum Medical College of Ohio, Toledo, OH, April 19-21, 1995

- 11) K. M. Ayyangar, E. Parsai, M. F. Chan, R. R. Dobelbower, S. Mange, S. W. McNeeley, T. Pawlicki, **R. A. Price**, A. Sen Stereotactic Radiosurgery At The Medical College of Ohio With Distinct Features in Dose Optimization Medical College of Ohio, Toledo, OH Presented at AAPM annual meeting in Boston, MA, 1995
- 12) K. M. Ayyangar, **R. A. Price**, E. Parsai, R. R. Dobelbower An Automated Block Determination Method For 3-D Treatment Planning Utilizing Arc Rotation Medical College of Ohio, Toledo, OH. Presented at AAPM annual meeting in Philadelphia, PA, 1996
- 13) **R.A. Price and** K.M. Ayyangar IORT Apparatus Design Improvement Through the Evaluation of Electron Spectral Distributions Using Monte Carlo Methods Medical College of Ohio, Toledo, OH. Presented at AAPM annual meeting San Antonio, TX, 1998
- 14) **R.A. Price**, K.M. Ayyangar, Dobelbower, R.R. Correction Methods for Decrease in Penetration and Constriction of Isodose Curves When Blocking is Used During Electron Beam IORT Presented at International Society of Intraoperative Radiation Therapy Meeting Pamplona, Spain, 1998
- 15) **R.A. Price**, K.M. Ayyangar, Dobelbower, R.R. Design Improvement of an IORT System Through the Evaluation of Electron Beam Characteristics Using Monte Carlo Simulations Presented at International Society of Intraoperative Radiation Therapy meeting Pamplona, Spain, 1998
- 16) Freedman GM, **Price, Jr., RA**, Mah D, Hanlon A, Milestone B, Movsas B, Horwitz E, Hanks GE Routine use of MRI and CT Simulation for Treatment Planning of Intensity Modulated Radiation Therapy (IMRT) in Prostate Cancer 43rd ASTRO Annual Meeting, San Francisco, CA, Nov. 2001
- 17) **R. A. Price Jr.**, S. Murphy, S. W. McNeeley. A method for increased dose conformity and segment reduction for sMLC delivered IMRT treatment of the prostate. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 18) **R. A. Price Jr.**, S. W. McNeeley, C.-M. Ma, L. Chen, J. Li, M. Ding, E. Fourkal, L. Qin. A practical method for dose determination using a non-water phantom for IMRT quality assurance. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002

- 19) C. Ma, **R. Price**. Dosimetry Verification of Treatment Planning and Beam Delivery for Modulated Electron Radiation Therapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 20) L. Chen, J. Li, **R. Price**, S. McNeeley, L. Wang, L. Qin, C. Ma. Phase Space Calibration for the Clinical Implementation of Monte Carlo Treatment Planning. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 21) L. Wang, L. Chen, M. Ding, **R. Price**, C. Ma, N. Nicolaou, D. Laske, B. Movsas. Reproducibility of Patient Position for Conformal Stereotactic Radiotherapy Using a Head and Neck Localizer Frame. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 22) L. Qin, J. Li, **R. Price**, L. Chen, S. McNeeley, M. Ding, E. Fourkal, C. Ma. A Monte Carlo Based MU Calculation Tool for IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 23) J. S. Li, C-M Ma, S.B. Jiang, J. Deng, **R. A. Price**, S. W. McNeeley, L. Chen, M. Ding, E. Fourkal. Source Modeling and Beam Commissioning for Photon Beams from a Siemens Accelerator. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 24) S. McNeeley, J. Li, **R. Price**, L. Chen, M. Ding, E. Fourkal, C. Ma. An Electron Specific Multileaf Collimator for Modulated Electron Radiation Therapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 25) C. Ma, J. Li, T. Pawlicki, S. Jiang, J. Deng, L. Chen, L. Wang, **R. Price**, S. McNeeley, M. Ding, E. Fourkal, L. Qin. MCSIM: A Monte Carlo Dose Verification Tool for Radiation Therapy Treatment Planning and Beam Delivery. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 26) S. McNeeley, M. Buyyounouski, **R. Price**, E. Horwitz, C. Ma. Prostate Displacement During Transabdominal Ultrasound. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002
- 27) M. Ding, J. Li, E. Fourkal, L. Chen, **R. Price**, S. McNeeley, L. Qin, C. Ma. Organ Motion in Radiation Therapy of Lung Cancer. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting Montreal, Canada, July 2002

- 28) **R. A. Price Jr.**, A. Pollack, E. M. Horwitz, B. Movsas, S. McNeeley, L. Chen, B. D'Emilia, C. Ma. Improved target coverage and rectal sparing for treatment of prostate cancer using IMRT vs 3D CRT. Presented at ASTRO Annual Meeting, New Orleans, LA, October, 2002
- 29) Ding M, Ma C-M, Li JS, McNeeley SW, Chen L, **Price RA**, Fourkal E, Qin L, Anderson P and Freedman G. Investigation of Modulated Electron Radiation Therapy for Breast Cancer. Presented at ASTRO Annual Meeting, New Orleans, LA, October, 2002
- 30) Chen L, **Price R**, Li J, Wang L, Qin L, Ma C, Pollack A. MRI-Based Treatment Optimization for Prostate IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 31) Paskalev K, Ma C, Jacob R, **Price R**. Daily Target Localization Based On 3D Image Correlation. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 32) Pawlicki, T, Whitaker M, **Price RA**, Boyer AL. Statistical Process Control for IMRT Quality Assurance. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 33) Ding M, Li J, **Price R**, Paskalev K, McNeeley SW, Qin L, Xiong W and Ma C. Modulated Electron Radiation Therapy Using a Conventional Multileaf Collimator: A Feasibility Study. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 34) McNeeley S, Ma C, **Price R**. Evaluation of Laser Based Patient Distance/Movement Device. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 35) **Price R**, Ma C, Chibani O. Evaluation of the Use of 18 MV Photons From a Siemens Linear Accelerator for IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 36) Li JS, Yang J, **Price R**, Chen L, Ma C-M. Machine Output Linearity for Breast IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 37) Qin L, **Price R**, Li J, Chen L, McNeeley S, Yang J, Ding M, Fourkal E, Xiong W, Mora G, Ma C. A Monte Carlo MU Verification Tool for IMRT Quality Assurance. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 38) Wang L, Paskalev K, Li J, **Price R**, Chen L, Fourkal E, Ding M, Yang J, Xiong W, Ma C. A Comprehensive Commissioning Procedure for

- Stereotactic Extracranial IMRT Using a Micro Multileaf Collimator. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 39) **Price R**, Ma C. Shielding Evaluation for IMRT Implementation in an Existing Accelerator Vault. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 40) Chen L, **Price R**, Li J, Wang L, Qin L, Ma C. Evaluation of MRI-Based Treatment Planning for Prostate Cancer Using the AcQPlan System. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 41) Ma C, **Price R**, Li J, Chen L, Wang L, Fourkal E, Qin L, Yang J. Monitor Unit Calculation for Monte Carlo Treatment Planning. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, San Diego, CA, August 2003
- 42) Paskalev K., Jacob R., **Price R.**, Ma C. Clinical evaluation of a clinical CT gantry on rails as a daily target localization tool. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Salt Lake City, UT, October, 2003.
- 43) **Price R.**, Li J., Yang J., McNeeley S., Chen L., Fourkal E., Ding M., Xiong W., Qin L., Mora G., Ma C. IMRT QA analysis: What to do with unresolved discrepancies. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Salt Lake City, UT, October, 2003.
- 44) McNeeley S, Pollack A, Horwitz E, **Price R**, Ma C. A Transabdominal Ultrasound Alignment Technique to Improve Alignment Quality and Consistency in the Treatment of Prostate Carcinoma. Presented at AAPM annual meeting, Pittsburg, PA, July 2004
- 45) Qin L, Yang J, Li L, Chen L, **Price R**, Ma C. Effect of Voxel Size on Monte Carlo Dose Calculations. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburg, PA, July 2004
- 46) Fourkal E, **Price R**, Ma C, Pollack A. Energy and Intensity Modulated Radiation Therapy Using Laser-Accelerated Proton Beams. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburg, PA, July 2004
- 47) Ma C, Xiong W, Yang J, **Price R**, Chen L, Pollack A. Image Guided Therapy: Aiming at Clonogenic Cells or Hypoxic Cells? Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburg, PA, July 2004
- 48) **Price R**, Ma C, McNeeley S, Hannoun_levi J, Pollack A. Monitor Unit and Subsequent Leakage Radiation Increases with the Inclusion of Pelvic Lymphatics in the Treatment of Prostate Cancer with Intensity Modulated

- Radiation Therapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
- 49) Xiong W, Li J, **Price R**, McNeeley S, Qin L, Ma C. Monte Carlo Study of Modulated Electron Delivery Using a Conventional Multi-leaf Collimator. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
 - 50) Chen L, Konski A, Chen Z, **Price R**, Li J, Wang L, Qin L, Ma C. MRI Study of Tumor Motion for Radiation Treatment Planning. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
 - 51) Stathakis S, **Price R**, Ma C. Shielding Evaluation of Existing Accelerator Vaults Under IMRT Conditions. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
 - 52) Chen L, Chen Z, **Price R**, Li J, Wang L, Qin L, Ma C, Pollack A. Treatment Setup for MRI-based Treatment Planning for Prostate IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
 - 53) McNeeley S, Anderson P, **Price R**, Pollack A, Ma C. Treatment of Endometrial Carcinoma Using IMRT with Concomitant Vaginal Cuff Boost. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
 - 54) Qin L, Xiong W, Yang J, Li J, McNeeley S, Chen L, **Price R**, Ma C. Investigation of an Electron Specific Multileaf Collimator for Modulated Electron Radiation Therapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM annual meeting, Pittsburgh, PA, July 2004
 - 55) **Price Jr. R.A.**, Hannoun-Levi J.M., Ma C-M., Pollack A. Pelvic lymphatic coverage in the treatment of prostate cancer with intensity modulated radiation therapy: a feasibility study. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Atlanta, GA, October, 2004.
 - 56) McNeeley S, Freedman G, Li J, Anderson P, **Price R**, Ma C. Volumetric Breast IMRT Planning Using ICRU-50 Concepts. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.
 - 57) Luo W, Li J, Fourkal E, Fan J, Yang J, **Price R**, Ma C. Monte Carlo Dosimetric Verification for IMRT QA Using MLC Log Files and EPID. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.

- 58) **Price R**, Xiong W, Li J, Ma C. From Unit Density to Heterogeneity Corrected Treatment Planning for Lung Cancer: A Monte Carlo-Based Dosimetric Analysis of the Effects on Prescription Dose. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.
- 59) Ma C, Li J, **Price R**, Chen L, Konski A, Watkins-Bruner D, Pollack A. Treatment Optimization for Prostate IMRT Incorporating Utility Analysis and Patient Decisions. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.
- 60) Paskalev K, Feigenberg S, McNeeley S, Horwitz H, **Price R**, Ma C. Daily Localization of Post-Prostatectomy Patients with Combined CT and US Image Guidance. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.
- 61) Xiong W, Wang L, Li J, **Price R**, Ma C. Comparison of Tumor Control Probability and Lung Complication Probability for Lung Cancer Treatment with and without Heterogeneity Correction. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.
- 62) Yang J, Li J, Chen L, Chen Z, Luo W, Fan J, Stathakis S, **Price R**, Ma C. Monte Carlo Investigation of Heterogeneity Effect for Head and Neck IMRT. Fox Chase Cancer Center, Philadelphia, PA. Penn State Cancer Institute, Hershey, PA. Presented at AAPM Annual Meeting, Seattle, WA, July, 2005.
- 63) Chen L., Paskalev K., Zhu J., Xu X., Wang L., **Price Jr. R.A.**, Horwitz E., Feigenberg S., Ma C., Pollack A. Image Guided Radiation Therapy for Prostate IMRT: Rectum Volume Changes and Dosimetric Considerations. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Denver, CO, October, 2005.
- 64) Feigenberg S., Morris C.M., Wang L., **Price R.** Paskalev K., Konski A. Ma C. What is the Optimal Beam Margin for Extracranial Stereotactic Radiotherapy? Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Denver, CO, October, 2005.
- 65) **Price R.A.**, Paskalev K., Chen L., Wang L., Feigenberg S., Ma C. MRI Cine Generated Patient Specific vs. Deep Inspiration/Expiration based PTVs in Stereotactic Radiotherapy for Lung Cancer. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Denver, CO, October, 2005.
- 66) D'Ambrosio, D.J., Feigenberg, S.J., **Price, R.A.**, Nicolaou, N., Langer, C., and Ridge, J.A. Weight loss can significantly alter Tumor Coverage during treatment with IMRT Implications for Adaptive Radiotherapy for Head and Neck Cancer. Fox Chase Cancer Center, Philadelphia, PA.

- Presented at the 88th annual meeting of the American Radium Society, Maui, Hawaii. 2006.
- 67) Fan J., Li J., Chen L., **Price R.**, Paskalev K., Chen Z., Stathakis S., Luo W., Ma C. Generic Source Models for Commonly Used Clinical Accelerator Beams for Monte Carlo Treatment Planning. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 68) Luo W., Li J., **Price R.**, Chen L., Fan J., Chen Z., Lin T., Wang L., Ma C. Developing a Comprehensive Patient-Specific QA Procedure for IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 69) Ma C., Li J., Stathakis S., Leal A., DuPlessis F., Fan J., Chen Y., Chen L., McNeeley S., **Price R.** Advanced Mixed Beam Radiotherapy for Breast and Head and Neck. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 70) Chen L., Paskalev K., Xu X., Zhu J., Wang L., **Price R.**, Horwitz E., Feigenberg S., Pollack A., Ma C. Rectal Dose Variation in Image Guided Radiation Therapy of Prostate Cancer. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 71) **Price R.**, Paskalev K., Fourkal E., Feigenberg S., Ma C. EPID Transmission Dosimetry for QA Use in Adaptive Radiotherapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 72) Chen Z., Ma C., Li J., Paskalev K., **Price R.**, Luo W., Fan J., Chen Y., Lin T., Chen L. Monte Carlo Investigation of Dose Perturbation by Hip Replacements in Intensity Modulated Radiotherapy of Prostate Cancer. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 73) Chen Z., Ma C., Li J., Paskalev K., **Price R.**, Luo W., Fan J., Stathakis S., Chen Y., Lin T., Chen L. Effect of Voxel Size on Monte Carlo Dose Calculation for Intensity Modulated Radiotherapy Treatment Planning. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 74) Paskalev K., Feigenberg S., McNeeley S., Horwitz E., **Price R.**, Wang L., Konski A., Ma C., Pollack A. Comparison Between CT-Based and Ultrasound-Based Localization for Prostate Patients. Fox Chase Cancer

- Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 75) McNeeley S., Buyyounouski M., Pollack A., Lattanzi J., Horwitz E., **Price R.**, Ma C. Long Term Clinical Experience Using Ultrasound Alignment. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Orlando, FL, July, 2006.
- 76) **Price R.**, Fourkal E., Li J., Paskalev K., Chen Y., Ma C. The use of advanced imaging techniques for improvement in IMRT plan homogeneity and delivery efficiency. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 77) Chen L., Xu X., Zhu J., Chen Z., Richardson T., Feigenberg S., Wang L., **Price R.**, Ma C. MRI-based treatment planning for glioblastoma (GBM): Dosimetric validation. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 78) Chen Y., Paskalev K., Horwitz E., **Price R.**, Buyyounouski M., Ma C., Pollack A. Surface smoothing of a tubular structure using a non-shrinking algorithm. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 79) Fan J., Paskalev K., Li J., Wang L., Chen L., **Price R.**, Jin L., Eldib A., Ma C. Determination of output factors for stereotactic radiosurgery beams by monte carlo and measurements. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 80) Klein E., Gerbi B., **Price R.**, Balter J., Paliwal B., Hughes L., Huang E. ASTRO's 2007 core physics curriculum for radiation oncology residents. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 81) Lin R., Li J., Fan J., Jin L., Luo W., **Price R.**, Chen L., Furkal E., Ma C. Investigation of the beam penumbra effect on IMRT dose conformity and uniformity. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 82) Paskalev K., Horwitz E., **Price R.**, Feigenberg S., Buyyounouski M., Chen Y., Konski A., Silverman I., Ma C. Pollack A. Daily localization for prostate bed patients based on surgical clips. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Minneapolis, MN, July, 2007.
- 83) Chen Y, Paskalev K, Horwitz E, **Price R**, Buyyounouski M, Ma C, Pollack A. Effect of Target Smoothness on Treatment Planning for Prostate IMRT.

- Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Los Angeles, CA, October, 2007.
- 84) Wang L, Paskalev K, Feigenberg S, Fan J, Buyyounouski M, Lally B, **Price R**, Ma C. Image Guided Hypofractionated IMRT for Multiple Intracranial Metastases- An Alternative to Arc-Based SRS. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 85) Chen Y, Paskalev K, **Price R**, Feigenberg S, Ma C. Dose Guided Patient Setup Improvement for Head-and-Neck Cancer IMRT Using Cone-Beam CT. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 86) Li JS, **Price R**, Jin L, Ma C-M. The Accuracy and Stability of the Calypso System for Prostate Localization and Motion Tracking. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 87) **Price R**, Paskalev K, Li J, Ma C, Pollack A. Volume-Based Isoeffective Dose Calculations for Hypofractionation and the Analysis of Critical Structure Limits with Respect to Known Toxicity Frequencies. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 88) Hossain M, Chen Y, Fan J, lin T, **Price R**, Ma C. A Feasibility Study of CT-Based IMRT Planning for Total Body Irradiation. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 89) Fan J, Fourkal E, Tafo AG, Veltchev I, **Price R**, Luo W, Li J Eldib A, Chen L, Ma C. Laser-Proton Inter-Track Effect and the DNA Double-Strand Break. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 90) Ma C, Li J, Fan J, Jin L, Eldib A, **Price R**, Wang L, Chen L, Hossain M. Developing Hardware and Software Tools for Advanced Mixed Beam Radiotherapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at AAPM Annual Meeting, Houston, TX, July, 2008.
 - 91) Morgan PB, Kuritzky N, **Price RA**, Nicolaou N, Ross E, Li S, Miyamoto CT, Micaily B, Feigenberg S. A Simple Method to Significantly Reduce Treatment Time for Head and Neck IMRT. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Boston, MA, September, 2008.
 - 92) Jin L, Ma C, Hossain M, Price R, Nicolaou N, Eldib A, Fan J, Chi Z, Xu Q, Li J. Extensive Scalp Irradiation Technique using Modulated Electron Radiotherapy Delivered by Photon Multileaf Collimator. Fox Chase

Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Boston, MA, September, 2008.

- 93) Li J, Jin L, Horwitz E, Buyyounouski M, Pollack A, Johnston S, Price Jr R, Ma C. Gains from Real-time Prostate Motion Monitoring during External Beam Radiation Therapy. Fox Chase Cancer Center, Philadelphia, PA. Presented at ASTRO Annual Meeting, Boston, MA, September, 2008.

Book Chapters:

- 1) Alan Pollack, M.D. and **Robert A. Price, Ph.D.** IMRT For Prostate Cancer. In: Intensity Modulated Radiation Therapy: The State of the Art. Eds. J. R. Palta and T. R. Mackie. AAPM Monograph No. 29. Medical Physics Publishing, Madison WI. Pp. 617-630. 2003.
- 2) Feigenberg SJ, Pollack A, **Price RA**, McNeeley SW, Horwitz EM. Prostate. In: Practical Essentials of Intensity Modulated Radiation Therapy (2nd edition). Ed. Chao, C., Lippincott Williams & Wilkins. Philadelphia, PA. pp. 308-324. 2005.
- 3) A. Pollack, M.D., Ph.D., **R. Price, Ph.D.**, L. Dong, Ph.D., S. J. Feigenberg, E. M. Horwitz, M.D. Intact Prostate Cancer. In: Intensity Modulated Radiation Therapy: A Clinical Perspective. Ed. Mundt.& Roeske BC Decker Inc. 2005, pp 436-448.
- 4) **R. A. Price Jr., Ph.D.**, E. M. Horwitz, M.D., S. J. Feigenberg, M.D., A. Pollack, M.D., Ph.D. Intact Prostate Cancer: Case Study. In: Intensity Modulated Radiation Therapy: A Clinical Perspective. Ed. Mundt.& Roeske BC Decker Inc. 2005, pp 459-463.
- 5) Buyyounouski MK, Horwitz EM, **Price Jr RA**, Feigenberg SJ and Pollack A. Prostate IMRT. In IMRT Handbook: Concepts & Clinical Applications. Bortfeld T, Rupert Schmidt-Ullrich R, de Neve W, Wazer DE (Eds). Springer-Verlag Heidelberg, Germany, 2006.

Publications:

- 1) K.M. Ayyangar, E. I. Parsai, J. A. Battle, J. A. Brown, D. A. Carter, R. R. Dobelbower, T. Pawlicki, **R. A. Price Jr.** Dose Optimization Methods for Stereotactic Radiosurgery at the Medical College of Ohio. Medical College of Ohio, Toledo, OH. Medical Physics for Human Health Care. Bhatnagar, P. K., Pradhan, A. S., Reddy, A. R., editors. Scientific Publishers, Jodhpur, India, 1995.
- 2) R. R. Dobelbower, **R. A. Price Jr.**, E. I. Parsai, K.M. Ayyangar, J. Battle, T. Pawlicki. 3-D Analysis of Treatment Techniques For Prostate Cancer: A Case Study. Medical College of Ohio, Toledo, OH. Medical Physics for Human Health Care. Bhatnagar, P. K., Pradhan, A. S., Reddy, A. R., editors. Scientific Publishers, Jodhpur, India, 1995.

- 3) **R. A. Price**, K. M. Ayyangar A Method of Gap and Field Size Determination for Abutting a Treatment Field to a Previously Treated Area. Medical College of Ohio, Toledo, OH Medical Dosimetry, Vol. 21, No. 2, pp. 83-86, 1996
- 4) Ayyangar, K. M., Parsai, E. I., Chan, M. F., Sen, A., Cao, Y., **Price, R. A.**, Saw, C. B.*Surface Region Electron Beam Dosimetry In The Presence Of Cerrobend Cutouts Medical College of Ohio, Toledo, OH, West Virginia Hospitals, Morgantown, WV* Indian Journal of Medical Physics, 21, 4, 1996
- 5) Dobelbower, R. R., Jr.; **Price, R. A.**; Battle, J. A.; Merrick, H. W. III; Porter, A. T. Intraoperative Radiation Therapy Terminology Medical College of Ohio, Toledo, Ohio. In: Intraoperative Radiation Therapy in the treatment of Cancer. Frontiers of Radiation Therapy and Oncology, Vol. 31. 6th International IORT Symposium and 31st San Francisco Cancer Symposium, San Francisco, Calif., Sept. 22-25, 1996. Meyer, J. L. and Vaeth, J. M. eds. S. Karger AG, Basel, Switzerland, 1997
- 6) Gerald E. Hanks, M.D., Timothy E. Schultheiss, Ph.D., **Robert Price, Ph.D.**, Shawn McNeeley, M.S., Wayne Pinover, D.O., Eric Horwitz, M.D., Alexandra Hanlon, Ph.D. Fox Chase Cancer Center: The Transition From 3D CRT To IMRT After Ten Years Of Clinical Experience. In: 3-D Conformal Radiation Therapy and Intensity Modulated Radiation Therapy in the New Millennium. Third International Symposium. Houston, TX, April 30-May 2 1999.
- 7) **Price Jr., R. A.** and Ayyangar, K. M. IORT Apparatus Design Improvement Through the Evaluation of Electron Spectral Distributions Using Monte Carlo Methods. Medical Physics, Vol 1, pp 215-220, 2000.
- 8) Hanks, G., Hanlon, A., Pinover, W., Horwitz, E., **Price, R.**, Schultheiss, T. Dose Selection for Prostate Cancer Patients Based on Dose Comparison and Dose Response Studies. Intern. J. Radiat. Oncol. Biol. Phys. Vol. 46, No. 4, pp. 823-832. 2000
- 9) **R. A. Price Jr., Ph.D.**, G. E. Hanks, M.D., S. W. McNeeley, M.S., E. Horwitz, M.D., W. Pinover, D.O. Advantages of Using Non-coplanar vs Axial Beam Arrangements When Treating Prostate Cancer With Intensity Modulated Radiation Therapy and the Step-and-Shoot Delivery Method. Intern. J. Radiat. Oncol. Biol. Phys. Vol. 53, No. 1, pp. 236-243. 2002.
- 10) CM Ma, JS Li, L Chen, L Wang, **R Price**, S McNeeley, M Ding and E Fourkal, Monte Carlo dose verification for advanced radiotherapy treatment techniques. Radiotherapy and Oncology, (2002) 64: s105-106
- 11) 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 Recent Developments in Accurate

- Radiation Dosimetry, Ed. J Seuntjens and P Mobit (Med. Phys. Publishing, Madison, 2002) 249-267.
- 12) Ma C.-M., **Price R.**, McNeeley S., Chen L., Li J.S., Wang L., Ding M., Fourkal E., Qin L. Clinical Implementation and Quality Assurance for Intensity Modulated Radiation Therapy. In Standards and Codes of Practice in Medical Radiation Dosimetry. Proceedings of an International Atomic Energy Agency symposium, Vienna, 25-28 November 2002. Vol 2. pp. 369-380.
 - 13) **Price Jr., R. A.**, Ma, C.M., Chibani, O. Shielding evaluation for IMRT implementation in an existing accelerator vault. Journal of Applied Clinical Medical Physics, Vol. 4, No. 3, Summer 2003.
 - 14) **Price Jr., R. A.**, Murphy, S., McNeeley, S.W., Ma, C.-M., Horwitz, E., Movsas, B, Raben, A, Pollack, A. A Method for Increased Dose Conformity and Segment Reduction for sMLC Delivered IMRT Treatment of the Prostate. Intern. J. Radiat. Oncol. Biol. Phys. Vol 57, No 3, pp 843-852. 2003.
 - 15) Pollack A, Hanlon A, Horwitz EM, Feigenberg S, Uzzo RG, **Price RA.** Radiation Therapy Dose Escalation for Prostate Cancer: A Rationale for IMRT. World J Urol 2003 Sep 21(4): 200-8
 - 16) Ma, C.M., Li, J.S., Pawlicki, T., Jiang, S.B., Deng, J., **Price, R.A.** Chen, L., Wang, L., Fourkal, E., Qin, L.H., Yang, J., Xiong, W., MCSIM - A Monte Carlo Dose Calculation Tool for Radiation Therapy. Proc. of the XVth International Conference on the Use of Computer in Radiation Therapy (ICCR, Seoul, 2004) pp515-9
 - 17) Qin, L., Chen, L., Li, J.S., **Price, R.A.**, 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 Computer in Radiation Therapy (ICCR, Seoul, 2004) pp665-8
 - 18) Buyyounouski, M.K., Horwitz, E.M., **Price, R.A.**, Hanlon, A.L., Uzzo, R.G., Pollack, A. Intensity-modulated radiotherapy with MRI simulation to reduce dose received by erectile tissue during prostate cancer treatment. Intern. J. Radiat. Oncol. Biol. Phys. Vol 58, No 3, pp 743-749. 2004.
 - 19) Paskalev, K., Ma, C-M., Jacob, R., **Price, R.**, McNeeley, S., Wang, L., Movsas, B., Pollack, A. Daily target localization for prostate patients based on 3D image correlation. Phys. Med. Biol. Vol. 49, issue 6. pp 931-939. 2004.
 - 20) Ma C-M, **Price Jr. R.A.**, Li J.S., Chen L., Wang L., Fourkal E., Qin L., Yang J. Monitor unit calculation for Monte Carlo treatment planning. Phys. Med. Biol. 49 (2004) 1671-1687.

- 21) Li J.S., Freedman G.M., **Price R.**, Wang L., Anderson P., Chen L., Xiong W., Yang J., Pollack A., Ma C-M. Clinical implementation of intensity-modulated tangential beam irradiation for breast cancer. *Med. Phys.* 31 (5), May 2004, pp. 1023-1031.
- 22) Xiong W., Li J., Chen L., **Price R.A.**, Freedman G., Ding M., Qin L., Yang J., Ma C-M. Optimization of combined electron and photon beams for breast cancer. *Phys. Med. Biol.* 49 (2004), pp. 1973-1989.
- 23) Buyyounouski, M.K., Horwitz, E.M., Uzzo, R.G., **Price, R.A.**, McNeeley, S.W., Azizi, D., Hanlon, A.L., Milestone, B.N., Pollack, A. The radiation doses to erectile tissues defined with magnetic resonance imaging after intensity modulated radiation therapy or iodine-125 brachytherapy. *Intern. J. Radiat. Oncol. Biol. Phys.* Vol 59, No 5, pp 1383-1391, 2004.
- 24) Wang L, 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*, Vol. 5, No. 2, Spring 2004, pp 29-41.
- 25) Chen L, **Price Jr. RA**, Wang L, Li J, Qin L, Mcneeley S, Ma C-M, Freedman
G M, Pollack A. MRI-based treatment planning for radiotherapy: dosimetric verification for prostate IMRT. *Intern. J. Radiat. Oncol. Biol. Phys.* Vol 60, No 2, pp 637-647, 2004.
- 26) Chen L, **Price Jr. RA**, Nguyen T-B, Wang L, Li JS, Qin L, Ding M, Palacio L, Ma C-M, and Pollack A. Dosimetric evaluation pf MRI-based treatment planning for prostate cancer. *Phys. Med. Biol.* 49 (2004) 5157-5170.
- 27) Stathakis S, **Price Jr. RA**, MA C-M. Dosimetry validation of treatment room shielding design. *Med. Phys.* 32 (2) 2005.
- 28) Yang J, Li JS, Chen L, **Price RA**, McNeeley S, Qin LH, Wang L, Xiong W, Ma CM. Investigation of Heterogeneity effect and dose verification for IMRT using Monte Carlo simulations. *Phys. Med. Biol.* 50:869-878, 2005.
- 29) **R. A. Price Jr., Ph.D.**, K. Paskalev, M.S., S. McNeeley, M.S., C-M. Ma, Ph.D. Elongated Beamlets: A simple technique for segment and MU reduction for sMLC IMRT delivery on accelerators utilizing 5 mm leaf widths. *Phys. Med. Biol.* 50 (2005) N235-N242.
- 30) Paskalev K., Feigenberg S., Jacob R., McNeeley S., Horwitz E., **Price R.**, Ma C., and Pollack A. Target localization for post-prostatectomy patients using CT and ultrasound image guidance. *Journal of Applied Clinical Medical Physics*, Vol. 6, No. 4, Fall 2005, pp 40-49.

- 31) Pollack A, Hanlon AL, Horwitz EM, Feigenberg SJ, Konski AA, Movsas B, Greenberg RE, Uzzo RG, Ma C-M, McNeeley SW, Buyyounouski MK, **Price Jr. RA**. Dosimetry and Preliminary Acute Toxicity In The First 100 Men Treated For Prostate Cancer On A Randomized Hypofractionation Dose Escalation Trial. *Intern. J. Radiat. Oncol. Biol. Phys.* Vol 64, No 2, pp 518-526, 2006.
- 32) Wang L, Li J., Paskalev K., Hoban P., Lou 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*, Vol. 7, No. 1, Winter 2006, pp 21-34.
- 33) Luo W., Li J., **Price Jr. R.A.**, Chen L., Yang J., Fan J., Chen Z., McNeeley S., Xu X., Ma C-M. Monte Carlo based IMRT dose verification using MLC log files and R/V outputs. *Med. Phys.* 33 (7), pp 2557-2564, 2006.
- 34) **R. A. Price Jr., Ph.D.**, J.M. Hannoun-Levi, M.D., E. Horwitz, M.D., M. Buyyounouski, M.D., M.S., K. J. Ruth, M.S., C-M. Ma, Ph.D., A. Pollack, M.D., Ph.D. The impact of pelvic nodal irradiation with IMRT on treatment of prostate cancer. *Intern. J. Radiat. Oncol. Biol. Phys.* Vol 66, No 2, pp 583-592, 2006.
- 35) Freedman GM, Meropol NJ, Sigurdson ER, Hoffman J, Callahan E, **Price R**, Cheng J, Cohen S, Lewis N, Watkins-Bruner D, Rogatko A, Konski A. Phase I trial of preoperative hypofractionated intensity modulated radiation therapy (IMRT) with incorporated boost and oral capecitabine in locally advanced rectal cancer. *Int J Radiat Oncol Biol Phys* 67: 1389-93; 2007.
- 36) Chen L, Nguyen TB, Jones E, Chen Z, Luo W, Wang L, **Price Jr. RA**, Pollack A, Ma CM. Magnetic resonance-based treatment planning for prostate intensity-modulated radiotherapy; creation of digitally reconstructed radiographs. *Int J Radiat Oncol Biol Phys* 68(3): 903-11; 2007.
- 37) Klein EE, Gerbi BJ, **Price Jr. RA**, Balter JM, Paliwal B, Hughes L, Huang E. Ad Hoc Committee on Teaching Physics to Residents. ASTRO's 2007 Core Physics Curriculum for Radiation Oncology Residents. *Int J Radiat Oncol Biol Phys* Vol 68, No5, pp 1276-88; 2007.
- 38) D'Ambrosio DJ, Pollack A, Harris, EER, **Price Jr. RA**, Verhey LJ, Roach III M, Demanes DJ, Steinberg ML, Potters L, Wallner PE, Konski A. Assessment of external beam radiation technology for dose escalation and normal tissue protection in the treatment of prostate cancer. *Int J Radiat Oncol Biol Phys* Vol 70, No3, pp 671-677; 2008.
- 39) Jin L, Ma C-M, Fan J, Eldib A, **Price RA**, Chen L, Wang L, Chi Z, Xu Q, Sherif M and Li JS. Dosimetric verification of modulated electron

- radiotherapy delivered using a photon multileaf collimator for intact breasts. *Phys. Med. Biol.* 53 (2008), 6009-6025.
- 40) Luo W, Li J, Fourkal E, Fan J, Xu X, Chen Z, Jin L, **Price R**, Ma C-M. Dosimetric advantages of IMPT over IMRT for laser-accelerated proton beams. *Phys. Med. Biol.* 53 (2008), 7151-7166.
- 41) Konski A, Movsas B, Konopka M, Ma C, **Price R**, Pollack A. Developing a radiation error scoring system to monitor quality control events in a radiation oncology department. *J. Am. Coll. Radiol.* 2009 Jan; 6(1): 45-50.