

## Curriculum Vitae

1. **Date:** November 24, 2019

### PERSONAL

2. **Name:** Xiaodong Wu

3. **Home Phone:** [REDACTED]

4. **Cell Phone:** [REDACTED]

5. **Home Address:** [REDACTED]

6. **Citizenship:** U.S.A

7. **email:** [REDACTED]

### HIGHER EDUCATION

8. **Institutional:**

**Ph.D.** in Biomedical Engineering University of Miami, June, 1996.

**M.Sc.** in Radiological Sciences University of Miami. August, 1988.

**B.S.** in Physics Xiamen University, P.R. China. July, 1985.

9. **Non-Institutional:** Not applicable.

10. **Certification/Licensure:** American Board of Radiology (Therapeutic Physics).  
Therapeutic Radiological Physicist Licensed by the State of Florida Department of Health.

## **EXPERIENCE**

### **11. Academic:**

March. 2018 – present	Director of Research & Development Shanghai Proton and Heavy Ion Center Fudan University Tumor Hospital, Shanghai. China
Jan. 2017 – present	Visiting Professor Department of Radiation Oncology Fujian Union Hospital Fujian College of Medicine, Fujian, China
Dec. 2013 – present	Senior Medical Physicist and Graduate Advisor Director of International Consortium Shanghai Proton and Heavy Ion Center Fudan University Tumor Hospital, Shanghai. China
August 2011-present	Adjunct Professor Department of Biomedical Engineering University of Miami Miami, Florida
June 2009 – July 2011	Professor and Chief of Medical Physics Professor of Biomedical Engineering
June 1999 – June 2009	Associate Professor and Chief of Medical Physics
June 1997 – June 1999	Assistant Professor and Chief of Medical Physics
Dec. 1989 – June 1997	Instructor and Staff Medical Physicist Department of Radiation Oncology University of Miami School of Medicine Miami, FL, USA

### **12. Non-Academic**

Sep 2017 – present	President and CEO Biophysics Innovation, LLC North Miami Beach, FL, USA
January 2017- present	Senior Scientific Advisor Genetalk Healthcare Shanghai China
January 2012 – present	President and CEO Biophysics Research Institute of America Miami, FL, USA

August 2011 – present	Managing Director and Director of Medical Physics Innovative Cancer Institute Miami, FL, USA
October 2011 – present	Director of Medical Physics JFK Comprehensive Cancer Institute JFK Medical Center Lake Worth, FL, USA
August 2008 – present	President and CEO Executive Medical Physics Associates, LLC Miami, FL, USA
October 2003 – present	Chief Medical Physicist Cyberknife Center of Miami Miami, FL, USA

## **PUBLICATIONS**

### **13. Books and Monographs Published:**

Wu X.: The Technical Infrastructure of a Modern Radiation Oncology Department. In: Radiation Oncology – An Evidence-based Approach. Springer 2008, Chapter 46.

Wu X., Fu D., De la Zerda A., Bossart E., Shao H., Both J., Nikesch W., Huang Z., Markoe A.M., Schwade J.G.: Patient Alignment and Target Tracking in Radiosurgery of Soft-Tissue Tumors Using Combined Fiducial and Skeletal Structures Tracking Techniques. In: Robotic Radiosurgery Volume II: Springer, 2007. Chapter 3.

Brown W.T., Wu X., Amendola B.E., Schwade J.G. *et al.*: Image-Guided Robotic Stereotactic Radiosurgery for Treatment of Primary, Recurrent and Metastatic Lung Tumors with the CyberKnife. In: Robotic Radiosurgery Volume II. Springer 2007, Chapter 17

Brown W.T., Perman M., Wu X., Yang J., Schwade J. G.: Image-guided robotic stereotactic radiosurgery of lung tumors. In: Robotic Radiosurgery Volume I: Cyberknife Society Press; 2005, Chapter 23.

Perman M., Bellairs E.E., Wu X., Schwade J. G.: Cancer of pancreas with special reference to epidemiology & radiosurgery. In: Robotic Radiosurgery Volume I: Cyberknife Society Press; 2005, Chapter 27.

Houdek P.V., Schwade J.G., Wolf I.M., Pisciotta V.J., Wu X., Fiedler J.A., Ting J.Y.,

Markoe A.M., Brandon A.H., Wolfson A.H.: Radiotherapy Information Management System. In: Boehme J.M., Rowberg A.H. and Wolfman N.T., eds. S/CAR 94 Computer Applications to Assist Radiology. Symposia Foundation, Encinitas, CA; 1994, pp. 452-456

#### 14. Scientific Articles in Refereed Journals:

Amendola B E, Perez N C, Wu X, et al. Safety and Efficacy of Lattice Radiotherapy in Voluminous Non-small Cell Lung Cancer. *Cureus*. 2019;11(3): e4263. DOI 10.7759/cureus.

M. Durante, H. Paganetti, A. Pompos, S.F. Kry, X. Wu, D.R. Grsshans. Report of a NCI special panel: Characterization of the physical parameters of particle beams for biological research. *Med. Phys.* 2018 Dec 3. doi: 10.1002/mp.13324

Amendola, B.E., N.C. Perez, X. Wu, J.M.B. Suarez, J.J. Lu, M. Amendola, Improved Outcome of Treating Locally Advanced Lung Cancer with the Use of Lattice Radiotherapy (LRT): A case report, *Clinical & Translational Radiation Oncology* (2018), doi: <https://doi.org/10.1016/j.ctro.2018.01.003>

D. Dick, X. Wu, W. Zhao, G. Hatoum. A fiducial-less tracking method for radiation therapy of liver tumors by diaphragm disparity analysis part 2: validation study using clinical data. *J. Radiat. Oncol.* Oct. 2018 DOI: [10.1007/s13566-018-0361-8](https://doi.org/10.1007/s13566-018-0361-8)

D. Dick, X. Wu, W. Zhao, G. Hatoum. A fiducial-less tracking method for radiation therapy of liver tumors by diaphragm disparity analysis part 1: simulation study using machine learning through artificial neural network. *J. Radiat. Oncol.* July 2018 DOI: [10.1007/s13566-018-0358-3](https://doi.org/10.1007/s13566-018-0358-3)

Jiang Fang, Xiaodong Wu, Yidong Yang and Weizhao Zhao. A New Imaging/Therapy platform by using external radionuclide (Ir-192) Part I: Monte Carlo FBCT and CBCT simulation for breast imaging. *J. Radiat Oncol.* April 2016 DOI 10.1007/s13566-016-0252-9

Amendola BE, Amendola MA, Perez N, Blanco JM, Wu X. Palliative - Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiotherapy (SBRT): Innovative and Effective Tool in the Management of Advanced Cancer Using Modern Radiotherapy Instrumentation. Review Article. *J Palliat Care Med* 2015, 5: 216. Doi:10.4172/2165-7386.1000216

Amendola BE, Amendola MA, Perez N, Wu X, et al. Local failure after primary radiotherapy in lung cancer: is there a role for SBRT? *Rep. Prac. Oncol. Radiother.* 2015, 20 (6): 440-445.

Blanco suarez J, Amendola B E, Perez N, Wu X. (November 24, 2015) The Use of Lattice Radiation Therapy (LRT) in the Treatment of Bulky Tumors: A Case Report of

a Large Metastatic Mixed Mullerian Ovarian Tumor. *Cureus* 7(11): e389.  
doi:10.7759/cureus.389

Hairong Chen, Xiaodong Wu, Georges F. Hatoum, Alejandro Gonzalez, Ricardo Garcia and Weizhao Zhao. A mechanical eyeball phantom for uveal melanoma radiosurgery by cyberknife. *J. Radiat Oncol.* August 2014 DOI 10.1007/s13566-014-0165-4

Saravana Kanagavelu, Seema Gupta, Xiaodong Wu, Sakhi Philip, Max M. Wattenberg, James W. Hodge, Mariluz D. Couto, Kristina D. Chung and Mansoor M. Ahmed. In Vivo Effects of Lattice Radiation Therapy on Local and Distant Lung Cancer: Potential Role of Immunomodulation. *Radiation Research* 2014 Aug;182(2):149-62

Hairong Chen, Xiaodong Wu, Georges F. Hatoum and Weizhao Zhao  
A novel 2D/3D transformation for radiosurgery of ocular tumors: computer simulation and phantom validation. *J. Radiation Oncology*. January 2014 DOI 10.1007/s13566-013-0139

Beatriz E. Amendola, Marco Amendola, Naipy Perez, Alejandro Iglesias, Xiaodong Wu. Volumetric-modulated arc therapy with RapidArc: An evaluation of treatment delivery efficiency. *Report of Practical Oncology and Radiationtherapy* 2013 (18): 383-386

Dieterich S, Cavedon C, Chuang CF, Cohen AB, Garrett JA, Lee CL, Lowenstein JR, d'Souza MF, Taylor DD. Jr., Wu X, Yu C. Report of AAPM TG 135: Quality assurance for robotic radiosurgery. *Med. Phys.* 2011; 38 (6): 2914-2936

Wu X, Murray T, Kaiser P, Hughes JR, Bossart E, Markoe AM. A Universal, Notched, Episcleral Plaque Set for Brachytherapy of Intraocular Tumors Adjacent to the Optic Nerve. *PeerEMed.com*; June 26, 2010; ID 19775

Wu X, Ahmed M, Wright J, Gupta S, Pollack A. On modern technical approaches of three-dimensional high dose lattice radiotherapy (LRT). *PeerEMed.com*; ID 19353; March 5, 2010;

Wu X. Single Fiducial in Lung SBRT Tracking. *Point/Counter Point. Medical Physics* 2009; 36(11): 4845-4847

Brown WT, Wu X, Fayad F, Fowler JF, Garcí'a S, Monterroso MI, de la Zerda A, Schwade JG: Application of Robotic Stereotactic Radiotherapy to Peripheral Stage I Non-small Cell Lung Cancer with Curative Intent. *Clinical Oncology* 2009; 21: 623-631

Brown WT, Wu X, Fowler JF, Garcia S, Fayad F, Amendola BE, de la Zerda A, Schwade JG: Lung Metastases Treated by CyberKnife(R) Image-Guided Robotic Stereotactic Radiosurgery at 41 Months. *South Med J.* 2008; 101(4): 376-382



Brown WT, Wu X, Amendola B, Fowler JF, et al. Treatment of early non-small cell lung cancer, Stage IA, by image-guided robotic stereotactic radioablation – Cyberknife. *The Cancer Journal* 2007; 13(2):87-94

Brown WT, Wu X, Fayad F, Fowler JF, et al. CyberKnife® Radiosurgery for Stage I Lung Cancer: Results at 36 Months. *Clinical Lung Cancer* 2007; 8(8): 488-492

Brown WT, Wu X, Wen BC, Fowler JF, et al. Early results of CyberKnife image guided robotic stereotatic radiosurgery for treatment of lung tumors. *Computer Aided Surgery*. Sept 2007;12(5):1-9

Shao H, Wu X, Luo C, Crook S, Bernstein A, Markoe A: The accuray of dynamic wedge dose computation in the ADAC Pinnacle RTP system. *J. Applied Clinical Med. Phys.* 2004; 5(4): 46-54

Landy H, Markoe A, Wu X, Patchen S, Reis I, Takita C, Abdel-Wahab M, Wen B, Wolfson A, Huang D: Safety and Efficacy of Tiered Limited-Dose Gamma Knife Stereotactic Radiosurgery for Unilateral Acoustic Neuroma. *Stereotatic Funct Neurosurg* 2004;82:147-152

Wolfson A, Wu X, Takita C, Shao H, Luo C, Watzich M, Diaz D, Walker G, Patino-Flynn V, Markoe A: A novel applicator for low-dose-rate brachytherapy of gynecological cancers. *Int. J. Gynecol Cancer* 2003: 13, 533-540

Crooks S.M, Wu X, Takita C., Watzich M, Xing L: Aperture Modulated Arc Therapy. *Phys. Med. Biol.* V48, p.1333-1344, 2003

Hayden B., Murray T., Cicciarelli N., Scott I., Alexandridou A., Hernandez E., Wu X, Markoe A., Feuer W. Fulton L., O'Brien J.: Hyperfractionated External Beam Radiation Therapy in the Treatment of Murine Transgenic Retinoblastoma. *Arch Ophthalmol*, V 120, P. 353-359, Mar 2002

Yen M.T., Tse D.T., Wu X, Wolfson A.H.: Radiation Therapy for Local Control of Eyelid Sebaceous Cell Carcinoma. *Ophthalmic Plastic and Reconstructive Surgery*, V16(3), P. 211-215, 2000.

Wu X, Chen Z.P., Luo C., Watzich M.L., Larsen R., Shao H., Wolfson A.H., Markoe A.M.: Dosimetric Evaluation of UMW Electron Beam Wedges. *Proceedings of Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*, July, 2000

Ting J.Y., Wolfson A., Wu X, Fiedler J.A., Yang C.C., Watzich M.C., Markoe A.M.: Bladder and Rectum Doses from External-Beam Boosts after Gynecologic Brachytherapy. *Radiology*, V209(3), p.825-830, 1998

Ting J.Y., Wu X., Yang C.C., Fiedler J.A., Watzich M.C., Markoe A.M.: Dose Volume Histogram for Bladder and Rectum. *Int. J. Radiat. Oncol. Biol. Phys.* 1997, 38(5): pp.1105-1111.

Wu X., Ting J.Y., Markoe A.M., Landy H.J., Fiedler J.A., Russell J.: Stereotactic Dose Computation and Plan Optimization Using the Convolution Theorem. *Stereotac. Funct. Neurosurg.* 1996; 66(suppl 1):302-308

Chung M.Y., Olsen K.R., Schwade J.G., Houdek P.V., Markoe A.M., Pisciotta V.J., Wu X.: Dose Rate Effect on Normal Rabbit Eyes and Experimental Choroidal Melanoma. *Exp. Eye Res.* 57, 1993, pp. 577-585.

Fiedler J.A., Pisciotta V.J., Wu X., Markoe A.M., Serago, C.F., Schwade J.G., Houdek P.V.: A Magnetic Resonance Imaging-Based Treatment Planning Method for Episclera Brachytherapy. *Endocurietherapy/Hyperthermia Oncology.* 9, 1993, pp. 201-208.

Houdek, P.V., Schwade, J.G., Serago, C.F., Landy, H.J., Pisciotta, V.J., Wu X., Markoe, A.M., Lewin, A.A., Abitbol, A.A., Bujnoski, J.L., Marienberg, E.S., Fiedler, J.A., Ginsberg, M.S.: Computer Control Stereotaxic Radiotherapy System. *Int.J. Rad. Onc. Biol. Phys.* 22(1), 1992, pp. 175-180

Houdek, P.V., Schwade, J.G., Wu X., Pisciotta, V.J., Fiedler, J.A., Serago, C.F., Markoe, A.M., Abitbol, A.A., Lewin, A.A., Braunschweiler, P.G., Sklar, M.D.: Dose Determination in High Dose-Rate Brachytherapy. *Int. J. Rad. Onc. Biol. Phys.*, 24(4), 1992, pp. 795-801.

Pisciotta, V.J., Wu X., Fiedler, J.A., Serago, C.F., Calish-Watzich, M., Schwade, J.G., Houdek, P.V.: A Rapid Method for Electron Beam Energy Check. *Med. Phys.* 19(6), November/December 1992, pp. 1451-1453.

Houdek P.V., Schwade J.G., Abitbol A.A., Pisciotta V., Wu X., Serago C.F., Markoe A.M., Lewin A.A., Averette H.E., Sevin B., Brandon A.H., Fiedler J.A., Cohen A.M., Fahed F.: Optimization of High Dose-Rate Cervix Brachytherapy; Part I: Dose Distribution. *International Journal of Radiation Oncology, Biology, Physics.* 21: 1621-1625, 1991

Houdek P.V., Schwade J.G., Serago C.F., Landy H.J., Pisciotta V., Wu X., Markoe A.M., Lewin A.A., Amendola B.E., Abitbol A.A., Bujnoski J.L., Marienberg E.S., Fiedler J.A., Ginsberg M.S.: Computer Controlled Stereotaxic Radiotherapy System. *International Journal of Radiation Oncology, Biology, Physics.* 22:175-180, 1991

## 15. Published Abstracts:

Wu X, Gupta, Umar, Agarwal, Portelance, Stoyanova, Pollack, Ahmed, Space-time Fractionation (STF): A Special Concept Whose Time Has Come. *Int J Radiat Oncol Biol Phys* 81(2): S750, 2011

Wu X, Bossart E, Wang K, Pollack A, Multi-fold Radiotherapy Technique, . *Int J Radiat Oncol Biol Phys* 78(3): S813, 2010

Wu X, Ahmed MM, Pollack A. On Modern Technical Approaches Of 3D High-dose Lattice Radiotherapy (LRT). *International Journal of Radiation Oncology, Biology, Physics.* 75(3): S723, 2009

Wu X, Both J, Bossart E, Wang K. The impact of varying gantry rotating speed and dose-rate on the quality of aperture-modulated arc therapy (AMAT). *AAPM* July 2009

Wu X: Objective Considerations of a Particle Therapy Center. *Proceedings of the 20<sup>th</sup> International Conference on the Application of Accelerators in Research and Industry.* Fort Worth, TX. August 10-15, 2008

Wu X, J Dooley, J Yang, V Persaud, E Bossart, H Shao, J Both, A de la Zerda, J Schwade, A Markoe: Beam Configuration of Photon-based Stereotactic Radiosurgery. *Med. Phys.* 32(6)-2087 June 2005

Wu X, Main W., Schwade G. J.: Measurement of total clinical accuracy of an image-guided radiosurgery system. *Med. Phys.* 31(6)-1901 June, 2004

Wu X, Deligero D., Luo C., Shao H., Watzich M.: IMRT QA using Superimposed Film/MOSFET Technique. *Med. Phys.* 29(6)-1273 June 2002

Wu X, Wolfson A.H., Shao H., Watzich M.L., Chen Z.P., Luo C., Larsen R., Markoe A.M.: The Dosimetric Evaluation of UMWW University GYN Applicator. *Med. Phys.* 28(6)-1178 June, 2001

Wu X, Chen Z.P., Luo C., Watzich M.L., Larsen R., Shao H., Wolfson A.H., Markoe A.M.: Dosimetric Evaluation of UMW Electron Beam Wedges. *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*, July, 2000

Luo C., Wu X, Chen Z.P., Shao H., Wolfson A.H., Markoe A.M.: Reducing the Dose to the Contralateral breast in the Conventional Two-wedge Tangential Breast or Chest Wall Radiotherapy. *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*, July, 2000



Chen Z.P., Wu X., Shao H., Luo C.: The Effects of the Radiation Leakage of MLC on the IMRT Application. 2<sup>nd</sup> Beijing International Congress on Med. Rad. Phys. Beijing, May, 2000

Wu, X., Chen, Z.P., Luo, C., Larsen, R., Landy, H.J., Berti, A., Markoe, A. M.: Dose-Volume Entropy as an Indication of Dose-Volume Uniformity. 9th International Meeting of the Leksell Gamma Knife Society, Nov. 8-11, 1998. Hong Kong, SAR.

Wu, X., Chen, Z., Luo, C., Watzich, M., Jones, G., Markoe, A.M.: An Iso-energetic flattening Filter for Total Skin Electron Beam Radiotherapy. American Association of Physicists in Medicine, 40th Annual Meeting and Exhibition, San Antonio, Texas, Aug. 1998. (Med. Phys. 25(7), July 1998)

Wu, X., Ting, J.Y., Yang C.C., Watzich, M., Markoe, A.M.: The Principle and Applications of an Iso-energetic Intensity Modulation Method for Therapeutic Electron Beams. Int. J. Radiat. Oncol. Biol. Phys. 39(2S) 150, 1997.

Wu, X., Ting, J.Y., Watzich, M., Markoe, A.M. Intersective 3-D Object Reconstruction from Subtraction Stereotactic Angiography in Radiosurgery for AVM. American Association of Physicists in Medicine, 38th Annual Meeting and Exhibition, Philadelphia, Pennsylvania, July 1996. (Med. Phys. 23(6), June 1996)

Wu, X., Ting, J.Y., Markoe, A., Landy, H.J., Fiedler, J.A. Stereotactic Dose Computation and Plan Optimization Using Convolution Theorem. Leksell Gamma Knife Society, 7th International Meeting, Lanai, Hawaii, Nov. 1995.

Wu, X., Pisciotto, V.J., Ting, J.Y., Fiedler, J.A., Watzich, M., Wolf, I., Schwade, J.G., Houdek, P.V. Dose-Volume Entropy. American Association of Physicists in Medicine, 36th Annual Meeting, Anaheim CA, July 1994. (Med. Phys. 21(6), June 1994, P.927).

Wu, X., Ting, J.Y., Pisciotto, V.J., Fiedler, J.A., Watzich, M., Wolf, I., Schwade, J.G., Houdek, P.V. Matrix Mapping and Optimal Boundary Point Considerations in DVH Calculations. American Association of Physicists in Medicine, 36th Annual Meeting, Anaheim CA, July 1994. (Med. Phys. 21(6), June 1994, p. 928)

Jabir, A.M., Fiedler, J.A., Wu, X., Pisciotto, V.J., Wolf, I.M., Houdek, P.V. Modelling of the Hell Effect in Three Dimensions, American Association of Physicists in Medicine, 36th Annual Meeting, Anaheim CA, July 1994. (Med. Phys. 21(6), June 1994, p. 948)

Pisciotto, V.J., Houdek, P.V., Schwade, J.G., Wu, X., Fiedler, J.A., Markoe, A.M.: Dose Distribution in the Buildup and Beam Periphery Regions: Comparison of Computed and Measured X-ray and Electron Beam Data. Radiological Society of North America, 78th Scientific Assembly and Annual Meeting, Chicago, IL, Nov/Dec 1992. (Radiology 185(P), November 1992, p. 129).

Fiedler, J.A., Houdek, P.V., Schwade, J.G., Pisciotto, V.J., Wu, X., Markoe, A.M.: Use of CT Simulation in Radiation Therapy Treatment Planning. Radiological Society of

North America, 78th Scientific Assembly and Annual Meeting, Chicago, IL, Nov/Dec 1992. (Radiology 185 (P), November 1992, p. 130). Photodynamic Therapy Dosimetry. Medical Physics, 18:3, 1991.

Wu X., Houdek P., Schwade J., Pisciotto V., Fiedler J., Serago C., Markoe A.: Fiedler J., Houdek P., Schwade J., Pisciotto V., Wu X., Serago C., Markoe A.: CT Simulator Based Treatment Planning. Medical Physics, 18:3, 1991.

Houdek P., Schwade J., Pisciotto V., Serago C., Wu X., Poole D., Markoe A., Amendola B., Calish M.: MRI-Based Treatment Planning Method For Episcleral Brachytherapy. Medical Physics, 17:3, 1990.

Poole D., Poole W., Pisciotto V., Wu X., Serago C., Calish M., Laguerre M., Bushnoski J., Schwade J., Houdek P.: Neutron Survey Around Medical Electron Accelerators. Medical Physics, 17:3, 1990.

Houdek P., Schwade J., Wu X., Serago C., Pisciotto V., Poole D., Lewin A., Abitbol A., Markoe A., Amendola B., Calish M.: High Dose-rate Brachytherapy: Dosimetry of a Rapidly Moving Radiation Source. Medical Physics, 17:3, 1990.

Houdek P., Schwade J., Abitbol A., Pisciotto V., Wu X., Serago C., Lewin A.: High Dose-Rate Brachytherapy: Dosimetry of Gynecologic Ring Applicator. Medical Physics, 16:6, 1989; Work-in-progress supplement.

## 19. Other Works:

Senior physics consultant for the commissioning of the Shanghai Proton and Heavy Ion Center. June, 2014

Designed and commissioned Innovative Cancer Institute, Miami, Florida. 2008

Designed and commissioned the Cyberknife Center of Miami, Miami, Florida. 2003

Designed and commissioned the radiation Oncology Department at Doctors Cancer Center, Puerto Rico. 2002

Established the first MLC-based IMRT program in Florida, at UM-SCCC, Nov. 1998

Commissioned GammaKnife Unit at Jackson Medical Center, Miami, 1989

Fenn, A.J., Bornstein, B.A., Svensson, G.K., Schwade, J.G., Houdek, P.V., Fiedler, J.A., Pisciotto V.J., Wu, X., Cheung, A.Y. Adaptive Focusing for Minimally Invasive Monopole Phased Arrays in Hyperthermia Treatment of Breast Carcinomas. Accepted

for poster presentation at the 36th Annual Meeting of the American Society for Therapeutic Radiology and Oncology, San Francisco CA, Oct. 3-7, 1994.

Houdek P., Schwade J., Abitbol A., Markoe A., Brandon A., Wu X., Pisciotta V., Fiedler J., Serago C., Lewin A., Braunschweiger P., Sklar M., Calish M.: HDR Transvaginal Brachytherapy: Applicator Design and Dosimetry. Activity, Supplement 2(Selectron Brachytherapy Journal), Nucletron Corporation Place of Publication.\: Columbia, MD.

Houdek P., Schwade, J., Serago, C., Markoe, A., Landy, H., Pisciotta, V., Fiedler, J., Wu, X., Lewin, A., Abitbol, A., Sergio, G.: A Practical Approach to Sterotactic Radiotherapy. Centerline, Varian's Newsletter for the Radiotherapy Community, 14:3, 1991.

## **PROFESSIONAL**

**20. Editorial Responsibilities:** Editorial Board Member, The American Journal of Chinese Medicine.

Editorial Board Member, Journal of Radiation Oncology

**22. Professional and Honorary Organizations:** American Association of Physicists in Medicine  
American Society of Radiation Oncology

**23. Honors and Awards:**

Granted Patents:

U.S. Patent, No. 9,950,192 (Issued April 27, 2018): Method for fiducialless real-time tracking in radiation treatment of abdominal tumors

U.S. Patent, No. 9,486,645 (Issued November 8, 2016): Radiation therapy device for ocular melanoma

U.S. Patent, No. 9,155,830 (Issued October 13, 2015): Device for radiation-activated localized delivery of treatment agents.

U.S. Patent, No. 8,825,137 (Issued September 2, 2014): Repositionable gynecological applicator for image-guided radiosurgery (IGRS) and image-guided radiation therapy (IGRT) for localized treatment of gynecological tumors.

U.S. Patent, No. 8,395,131 (Issued March 12, 2013): Method of 3D Lattice Radiotherapy.

U.S. Patent, No. 7,789,561 (issued September 7, 2010): Laser Aligned Image Guided Radiation Beam Verification Apparatus.

U.S. Patent, No. 7,780,349 (issued August 24, 2010): Apparatus and Method for Robotic Radiosurgery Beam Geometry Quality Assurance.

U.S. Patent, No. 7,531,810 (issued May 12, 2009): Integrated Half-Beam Profile Measurement and Polar Profile for Circular Radiation Field Symmetry Assessment

U.S. Patent, No. 6,641,518 B2 (issued Nov. 4, 2003): Multicomponent Vaginal Cylinder System for Low Dose Rate Brachytherapy for GYN Cancers.

U.S. Patent, No. 6,127,688 (issued Oct. 3, 2000) : Iso-Energetic Intensity Modulator for Therapeutic Electron Beams, Electron Beam Wedge and Flattening Filters.

Pending Patents:

U.S. Patent (Pending), US2016/0230139 A1 (February 30, 2016): Self-contained Device and System to Produce ex-vivo Autologous Whole Cell Tumor Vaccines.

Awards:

2010 Best Clinical Paper on Emerging Technology. Annual Cyberknife Society Scientific Meeting, March 26-27, 2010, Dallas, Texas, USA

1997 Basic Science Travel Grant, American Society for Therapeutic Radiology and Oncology (ASTRO).

**25. Other professional Activities:**

**Oral Presentations and Lectures at Professional Meetings:**

Invited Speaker on: Spatially fractionated Radiation Therapy. Workshop on Understanding High-Dose, Ultra-Dose-Rate and Spatial Fractionated Radiotherapy,. National Cancer Institute, Bethesda, MD, USA. August 20-21, 2018

Academic Committee Chair, The Second Shanghai International Summit for Particle Radiation Therapy. Shanghai, China. December 7-9, 2107

Invited Speaker on: Treatment planning in heavy ion beam therapy. 16th International Workshop on Ion Beams in Biology and Medicine (IBIBAM 2016). Chennai, India. November 12-13, 2016

Invited Speaker on: Biophysical Modeling of Carbon Ion Radiation Therapy. International Conference on Radiation Biology. Chennai, India, November 9-11, 2016

Invited Speaker on: Biophysical Modeling in Heavy Ion Radiation Therapy. International Symposium on Particle Therapy. Shanghai, China, April 8-9, 2015

Invited Speaker on: Radiation Induced Immune Activation. Indian Cancer Congress 1<sup>st</sup> Annual Meeting. Delhi, India, Nov 21-24, 2013

Invited Speaker on: Physics and Radiobiology of Space-Time Fractionation in Radiation Therapy. International Conference on Radiation Biology, Mumbai, India. Nov. 22-24, 2012

Invited Speaker on: Modern Technologies in Radiation Therapy. 15<sup>th</sup> Uludag Oncology Symposium, Uludag, Turkey. March 6-9, 2011

Invited speaker on: Objective Considerations of a Particle Therapy Center. 20<sup>th</sup> International Conference on the Application of Accelerators in Research and Industry. Fort Worth, TX. August 10-15, 2008

“Early Experience with Xsight-Lung, the Tumor-based Fiducial-less Tracking Technique for the Treatment of Lung Tumors”. 7<sup>th</sup> Annual Cyberknife User’s Meeting. California, January 23-26, 2008

“A New Apparatus for Beam Geometric QA”. 6<sup>th</sup> Annual Cyberknife User’s Meeting. La Quinta, California, January 24-28, 2007

“Patient alignment and target tracking in radiosurgery of soft-tissue tumors using combined fiducial and skeletal structures tracking technique”. 5<sup>th</sup> Annual Cyberknife User’s Meeting. Carlsbad, California, January 25-27, 2006

Beam Configuration of Photon-based Stereotactic Radiosurgery. American Association of Physicists in Medicine, 47th Annual Meeting and Exhibition, July 2005

Guest speaker on “Image-guided robotic radiosurgery”. CyberKnife National Clinical Application Seminar, Hangzhou, China, May 27, 2005

“Practical Target Tracking Strategy for Soft-tissue Tumor SRS with Cyberknife” Robotic Whole Body Stereotactic Radiosurgery Symposium, Washington DC May 13, 14, 2005

Guest speaker on “Episcleral Plaque Brachytherapy”. Nuclear Pharmacy Track – Annual Academy of Pharmacy Practice Mid-Year Clinical Conference, Florida Pharmacy Association. Orlando, Florida, Oct. 26, 2002

Guest speaker on “IMRT with DMLC”. American Association of Physicists in Medicine



Florida Chapter Meeting, Cocoa Beach, Florida, Sep. 20, 2002

Dosimetric Evaluation of UMW Electron Beam Wedges. Chicago 2000 World Congress on Medical Physics and Biomedical Engineering, July, 2000

The Principle and Applications of an Iso-energetic Intensity Modulation Method for Therapeutic Electron Beams. 39th Annual Scientific Meeting of the American Society for Therapeutic Radiology and Oncology, Oct. 1997, Orlando, Florida

A Convolution Based Dose Computation Method for Leksell Gamma Knife-based Stereotatic Radiosurgery. American Association of Physicists in Medicine, 39th Annual Meeting and Exhibition, Milwaukee, Wisconsin, July 1997

Guest speaker: Physics of Gamma-knife Radiosurgery. Simposio Internacional Avances en Neurologia Y Neurocirugia, Miami Beach, Florida, Aug., 1996

Intersective 3-D Object Reconstruction from Substraction Stereotactic Angiography in Radiosurgery for AVM. American Association of Physicists in Medicine, 38th Annual Meeting and Exhibition, Philadelphia, Pennsylvania, July 1996.

Dose-Volume Entropy. American Association of Physicists in Medicine, 36th Annual Meeting, Anaheim CA, July 1994.

Matrix Mapping and Optimal Boundary Point Considerations in DVH Calculations. American Association of Physicists in Medicine, 36th Annual Meeting, Anaheim CA, July 1994.

Practical High Dose Rate Treatment Planning Workshop: Fourth Annual Mid-Winter Symposium /GYN High Dose Rate Brachytherapy. University of Miami Department of Radiation Oncology, Miami, FL: January 19-21, 1994

Photodynamic Therapy Dosimetry. The 33rd Annual Meeting of the American Association of Physicists in Medicine. San Francisco, California: July 25, 1991.

Real-time Output Control System for Photodynamic Therapy Using Gold Vapor Laser. The 3rd Biennial Meeting of International Photodynamic Association. Buffalo, New York: July, 1990

High Dose Rate Brachytherapy: Dosimetry of a Rapidly Moving Source. Thirty-Second Annual Meeting of the American Association of Physicists in Medicine. St. Louis, Missouri: July 23, 1990.

High Dose-Rate Transvaginal Applicator. Seventy-Fifth Annual Meeting of the Radiological Society of North America. Chicago, Illinois: November, 1989.

### **Posters at Professional Meetings:**

“Stereotactic Beam Observer”. 7<sup>th</sup> Annual Cyberknife User’s Meeting. Scottsdale, Arizona, January 23-26, 2008

“Cyberknife Physics QA: an institutional perspective”. 5<sup>th</sup> Annual Cyberknife User’s Meeting. Carlsbad, California, January 25-27, 2006,

Measurement of Total Clinical Accuracy for an Image Guided Radiosurgery System. Annual Meeting of the American Association of Physicists in Medicine. July, 2004

IMRT QA using Superimposed Film/MOSFET Technique. Annual Meeting of the American Association of Physicists in Medicine. July, 2002

The Dosimetric Evaluation of UMWW Universal GYN Applicator. Annual Meeting of the American Association of Physicists in Medicine. July, 2001

Dosimetric Evaluation of UMW Electron Beam Wedges. Chicago 2000 World Congress on Medical Physics and Biomedical Engineering. July, 2000

Intersective 3-D Object Reconstruction from Stereotactic Magnetic Resonance Angiography in Radiosurgery for AVM. 8th Internal Leksell Gamma Knife Society Meeting. June 1997, Marseille, France

Stereotactic Dose Computation and Plan Optimization Using Convolution Theorem. Leksell Gamma Knife Society, 7th International Meeting, Lana’i, Hawaii, Nov. 1995.

Six-Dimensional Target Localization. Thirty-Forth Annual Meeting of the American Association of Physicists in Medicine. August, 1992.

A Rapid Method for Electron Beam Energy Check. Thirty-Second Annual Meeting of the American Association of Physicists in Medicine. July, 1990.

## **TEACHING**

### **27. Thesis and Dissertation Advising:**

“Fiducial-Less Real-Time Tracking for the Radiation Therapy of Liver Tumors using Artificial Neural Networks”, Thesis for PhD in Biomedical Engineering by Deon Dick, University of Miami, June, 2018

“Integrated Brachytherapy IGRT system with Ir-192 source”, Thesis for PhD in Biomedical Engineering by Jian Fang, University of Miami, June, 2016

“Bragg Peak Range Uncertainty Analysis for Carbon Ion Beams through PET/CT - a phantom study”, These for MsC in Medical Physics by Wei Ren, University College of London, August, 2015

“Image-guided robotic radiosurgery for ocular melanoma”, These for PhD in Biomedical Engineering by Hairong Chen, University of Miami, December, 2014

“Web-based Medical Imaging Simulation System for Education and Research”, These for MSc in Biomedical Engineering by Xiping Li, University of Miami, December, 2011

“Design and development of a testing mechanism for quality assurance in Cyberknife beam geometry”, Thesis for the degree of M.S. in Biomedical Engineering by Zicong Huang, Florida International University, July 8, 2007

“Arc-Binary IMRT with conventional MLC-based linear accelerator”, These for PhD in Biomedical Engineering by Jun Yang, University of Miami, April 1, 2005

“Intensity-Modulated Radiation Therapy Inverse Planning Algorithm: Minimize the Negative Beams from Iterating the Dose Voxels – A Linear Algebra Approach”, These for PhD in Biomedical Engineering by Chunsong Luo, University of Miami, April 1, 2003

“Multi-modality Image Registration for Radiotherapy Planning”, Thesis for the degree of M.S. in Biomedical Engineering by Neeraj Verma, Florida International University, July 8, 2003

## **28. Current and Past Teaching Responsibilities:**

HCA East Florida Division Residency Program July 2017 – present  
Physics of Medical Imaging

Department of Biomedical Engineering 2011-present  
Serve as graduate supervisor for MS and PhD students

Department of Biomedical Engineering (Medical Physics Program Initiative) 2006-2011  
BME 581: Radiobiology (covering radiotherapy portion).  
BME 682: Radiation Therapy Physics  
BME 683: Clinical Rotation for Radiation Therapy Physics

Department of Radiation Oncology Residency Program/University of Miami School of Medicine:  
Clinical Physics, didactic lecturing 1989 - 2003

Clinical Physics, clinical teaching 1989-2011

Jackson Memorial Hospital Radiation Oncology Technologist Training Program:  
Radiation Therapy Physics I and II, 1989 - 1992,

Miami Dade Community College Radiation Therapist Training Program.  
Radiation Physics I, II and Clinical Physics I, II, 1993 - 1998.

### **Research Grants**

Role: Co-investigator 9/30/15-9/30/20  
Source: NCI BAA-N01CM51007-51 – Chandan Guha (PI)  
Title: A Prospective Randomized Trial of Carbon Ion versus Conventional Radiation Therapy for Locally Advanced Unresectable Pancreatic Cancer

Role: Co-investigator 1/1/13 - 12/31/14  
Source: NASA NNJ12ZSA001N – McNiece (PI)  
Title: The effect of space radiation on stem cells and vascular and Cardiac Disease  
Amount: \$350,000

Role: Co-investigator 7/1/10 - 6/30/12  
Source: NIH-NCI 1-R21-CA-153826-01 - Pollack (PI)  
Title: MRI-Guided Radiotherapy and Biomarkers for Prostate Cancer  
Amount: \$600,000

Role: PI 2002-2004  
Source: NASI (North American Scientific) industrial research fund.  
Title: Development of Eye plaque Brachytherapy program.  
Amount: \$100,000

### **SERVICE**

#### **29. Committee**

Member, Human Use Committee on Radiation – University of Miami, 1997 to 2011.  
Member, Radiation Safety Committee – JFK Medical Center, Atlantis FL, 2011-present  
Member, Radiation Safety Committee – Doctors Hospital, Miami FL, 2012-present

#### **30. American College of Radiology (ACR) Accreditation surveyor**

31. Member, Industrial advisory Board, 2013-present  
Department of Biomedical Engineering, University of Miami
32. Board of Director, 2016-present  
Miami Music Festival