



## **Curriculum Vitae (C.V.)**

### **Personal Data**

Name: Seied Rabi (Mehdi) Mahdavi  
Date of Birth: 22,10, 1341 (12, January, 1963)  
Marital Status: Married  
No. of Children: One son and one daughter  
Nationality: Iranian

### **Work address**

Department of Medical Physics, Faculty of Medicine, Tehran University of  
Medical Sciences (TUMS), Tehran, IRAN  
Tel/fax. (+98)(21)88622647

### **Education Records:**

- 2005 PhD of Medical Physics - Tehran university of Medical Sciences  
(TUMs)[Thesis title: In-Vivo Radiobiological Assessment of Prostacyclin Mediated  
Vascular Changes leading to Development of Radiation Myelopathy in Rat Cervical  
Spinal Cord]
- 2005 Participation in the European Master of Sciences course in Radiation  
Biology at the Gray Cancer Institute those in the field of biological basis  
of radiotherapy and familiarized with the techniques of culturing and  
irradiating human cells in vitro and assessing the response using the  
micronucleus assay, at Mount Vernon Hospital and The Institute of  
Cancer Research in Sutton of London, UK
- 1996 MSc in Medical Physics – TUMS [Thesis title: Accuracy and  
Reproducibility assessment of treatment fields in Tele-radiotherapy]
- 1992 BSc in Radiology Technology – TUMS

### **Work Experiences**

2008 to now: Assistant Professor of Tehran University of Medical Sciences  
- Radiation Oncology Physicist

- President of Iranian Association of Medical Physicists (IAMP)
- Vice president of Middle East Federation of Organizations of Medical Physics (MEFOMP)

1996- 2008 Assistant professor of Babol University of Medical Sciences (BUMS)

1993- Radiotherapy Physicist: Radiotherapy physics, machine commissioning, three and two dimensional treatment planning and conformal radiotherapy experiences, clinical dosimetry and radiobiology

### **Teaching Experiences**

2009- IUMS: Medical Physics for medical students, radiotherapy physics, dosimetry, physics of nuclear medicine and MRI,

2005- 2009 IUMS & BUMS: Medical Physics, Dosimetry, and protection

2000- 2004 TUMS: Physics for Physiotherapy students, Radiotherapy techniques for radiographers

1996- 2000 BUMs: Different topics of Medical Physics for Para-medical students, Medical Physics for Medical students and Dentistry

1994-1995 TUMs: Radiotherapy physics for B.Sc students of Radiotherapy Technology

### **Research Experiences**

- Simulation of pituitary adenoma physical treatment planning by MCNP
- Fusion of magnetic resonance spectroscopy and CT Scan images for radiation treatment planning in prostate cancer
- Effect of 2ME2 and simultaneous gamma irradiation on cytogenetic damage of spheroid cells...
- Effects of CT planning on dose distribution error reduction
- Assessment of variations in TLD-100 dose response with beam energy
- Radiobiological study of changes in Prostacyclin secretions leading to development of Radiation Myelopathy
- Radiobiological of vascular changes in radiation myelopathy
- Short term changes in Prostacyclin secretory profile of irradiated rat cervical spinal cord
- Determination of Lymphocytes inactivating doses from Co-60 gamma radiation
- Comparison between two methods of shielded fields calculations
- Strontium-89 Chloride in bone metastasis, dosimetry and protection

- Design and Tailoring of body contouring device for patients in radiotherapy
- Accuracy and Reproducibility assessment of treatment fields in tele-radiotherapy

## **Workshop**

- 2011 (1389)-Lecturer on Radiation Therapy Treatment Planning System ISOgray: IAMP and DOSIsoft co., Tehran
- 2010 (1389)- Lecturer of Cancer Congress: Iranian Cancer Society, Tehran
- 2010 (1389)- Lecturer of 5<sup>th</sup> dosimetry workshop: Medical and agricultural research center, Karaj, Iran
- 2010 (1389)- Lecturer of 2<sup>nd</sup> Linac Training course and workshop: Cancer research institute (CRC) and IAMP, Imam Hospital, Tehran, Iran
- 2008 (1387) - Lecturer of Linac Training course and workshop: Cancer research institute (CRC), Imam Hospital, Tehran, Iran
- 2008 (1386)- Course of Physics of Medical Accelerators: Shahid Beheshti University, Tehran, Iran
- 2007 - Varian radiotherapy training program: Novy-Jicin radiotherapy center, Czechrepublica
- 2007 (1386) - Workshop Enzyme Immobilization: Babol University of Medical Sciences
- 2006 (1385) - PTW dosimetry instruments workshop: PTW company, Imam Hosein Hospital, Sh. Beheshti Medical University, Tehran, Iran
- 2005 (1384) - Ionizing radiation dosimetry workshop: Iranian Organization of Atomic Energy (IOAE), Karaj, Iran
- 2004 - Cell culture and Irradiation methods to radiobiological samples: Gray Cancer Institute, London UK
- 2003 (1382) - Working with laboratory animals workshop: Razi Research Institute, Karaj, Iran)
- 2002 (1377) - MCNP codes workshop (advanced course): IOAE, Iran
- 1999 (1377) - Interstitial and intra-cavitary radiotherapy workshop: IOAE, Iran
- 1998 (1377) - Research methodology workshop: BUMs, Iran
- 1998 (1377) - Methods of medical education workshop: BUMs, Iran
- 1996 (1376) - Intra-cavitary treatment with Cs-137 after-loading device: Sh. Beheshti Medical University, Iran

## Publications

### -Books:

“Radiotherapy techniques”. S.R. Mahdavi and *et al*, Iran Medical University press, 2006

### - Papers:

1. "Normal Tissue Complication Probability Modeling of Radiation-Induced Hypothyroidism After Head-and-Neck Radiotherapy" International Journal of Radiation Oncology, biology, physics. Accepted for publication Mar 15, 2012 (ISI)
2. " Conformal fields in prostate radiotherapy: A comparison between measurement, calculation and simulation" Journal of Cancer Research and Therapeutics - January-March 2012 - Volume 8 - Issue 1 (ISI)
3. " Role of MRS in target volume definition of Prostate radiotherapy" Iran J Med Phys Vol. 8, No.3, Winter 2012. (Index Copernicus, Iranmedex, ISC)
4. "Developing a Verification and Training Phantom for Gynecological Brachytherapy System" Iran J Med Phys Vol. 8, No. 1, Winter 2012. (Index Copernicus, Iranmedex, ISC)
5. "Designing and evaluating a simple small phantom for dosimetry intercomparison" Journal of Nuclear Science and Technology, No 57, (4) 2011.
6. "Evaluation of Thyroid Disorders During Head and Neck Radiotherapy by Using Functional Analysis and Ultrasonography" International Journal of Radiation Oncology, biology, physics. Accepted for publication May 26, 2011 (ISI)
1. " Dosimetry analysis of two new design 103Pd interstitial brachytherapy sources" Int. J. Low Radiation, Vol. 8, Nos. 5/6, 2011 (ISI)
2. "Comparing the results of 3D treatment planning and practical dosimetry in craniospinal radiotherapy using Rando phantom" Iran. J. Radiat. Res., 2011; 9(3): 151-158 (ISI)
3. " Evaluation of the combined effect of 2ME2 and Co60 on the inducement of DNA damage by IUdR in spheroid model of the U87MG glioblastoma cancer cell line using alkaline comet assay" Cell Journal (Yakhteh), 2011; 13(2) 83-90 (ISI)
4. "Development and characterization of a novel PRESAGE formulation for radiotherapy applications" Applied Radiation and Isotopes 69 (2011) 1540–1545 (ISI)

5. "Monte Carlo estimation of electron contamination in a 18 MV clinical photon beam" Iran. J. Radiat. Res., 2011; 9(1): 15-28 (ISI)
6. "Evaluation of melatonin for modulation of apoptosis-related genes in irradiated cervical spinal cord" Int. J. Low Dose Radiation, Vol. 7, No. 6, 2010; 436-445 (ISI)
7. " Dosimetric comparison of two craniospinal radiotherapy techniques for treatment optimization" Iranian Journal of Medical Physics 2010; Vol 7 (2) 1-8 (Index Copernicus, Iranmedex, ISC)
8. " Photoneutron and capture gamma dose equivalent for different room and maze layouts in radiation therapy" Radiation Protection Dosimetry (2010), pp. 1–8 (ISI)
9. " The effect of ethanolic extract of propolis on radiationinduced mucositis in rats" Saudi Med J 2010; Vol. 31 (6) 179-183 (EMBASE)
- 10."A basic dosimetric study of PRESAGE: the effect of different amounts of fabricating components on the sensitivity and stability of the dosimeter" Phys. Med. Biol. **55** (2010) 903–912 (ISI)
- 11." Characterization of a Radiochromic Solid Polymer Dosimeter According to its' Composition" WC 2009, IFMBE Proceedings 25/ III, pp. 284-287 (EMBASE)
- 12." Monte Carlo estimation of photoneutrons contamination from high-energy x-ray medical accelators in treatment room and maze: a simplified model" Radiation Protection Dosimetry, 2009: 1–12 (ISI)
- 13." Evaluation of melatonin for prevention of radiation myelopathy in irradiated cervical spinal cord" Yakhteh Medical Journal, 2009: 11 (1): 43-48 (ISI)
- 14."The role of CT-based radiotherapy planning on dosimetric correction" Iran J Radiol, 2009: 6(1): 23-28 (ISI)
- 15."Role of CT simulation in radiation treatment planning" Journal of Babol University of Medical Sciences, 2008, 10(4): 7-15
- 16."Monte Carlo simulation of TLD response function: Scattered radiation field application" Int. J. Low Radiation, 2008, 5(2): 124-133 (EMBASE)
- 17."Melatonin as a protective agent in spinal cord damage after gamma irradiation" Rep Pract Oncol Radiother, 2007: 12(2): 95-99 (EMBASE, Excerpta Medica, BIOBASE, Index Copernicus)
- 18."Adjacent field dose modification in breast radiotherapy by use of half-blocks" Tehran University Medical Journal (TUMJ), 2007: 64(11):32-36 (EMR, EMBASE, Index Copernicus)
- 19."Ovarian absorbed doses in radiotherapy of thoracic and abdominal regions" Journal of Babol University of Medical Sciences, 2006: 8(4):7-12

20. "Chronological response of prostacyclin changes to moderately low doses of radiation in rat cervical spinal cord" Iranian Journal of Radiation Research, 2006: 4(3): 129-136 (ISI)
21. "Long term changes of prostacyclin secretion in radiation induced myelopathy", Rep Pract Oncol Radiother, 2006: 11(6): 273-279 (EMBASE, Excerpta Medica, BIOBASE, Index Copernicus)
22. "Portal image contrast enhancement". Rep Pract Oncol Radiother, 2006: 11(1): 23-28 (EMBASE, Excerpta Medica, BIOBASE, Index Copernicus)
23. "Surveying the contra-lateral breast dose during the primary breast irradiation of mastectomy patients in three hospitals in Tehran". Journal of Iran university of medical sciences, 2005: 12 (46):323-330
24. "Developing a PC-based portal image contrast enhancement program". Iranian Journal of Radiation Research, 2005: 3(1): 37-42 (ISI)
25. "Ultra-structural histopathologic changes in radiation myelopathy of rat cervical spinal cord". Tehran university medical journal ( TUMJ), 2005: 63(8):607-614 (EMR, EMBASE, Index Copernicus)
26. "Evaluation of tissue heterogeneity effect on the received dose of orthovoltage X-ray in rat's cervical spinal cord". Journal of Iran university of medical sciences, 2005: 12(49): 53-62
27. "Dosimetry, Control and Irradiation of rat cervical spinal cord". Journal of Babol university of Medical Sciences 2005 7(2):7-13
28. "Short term changes in prostacyclin secretory profile of ....". Prostaglandins, Leukotrienes and Essential Fatty Acids, 2005: 72(5): 373-378 (ISI)
29. "Radiation myelopathy: a radiobiological review". Rep Pract Oncol Radiother, 2004: 9:119-27 (EMBASE, Excerpta Medica, BIOBASE, Index Copernicus)
30. "Evaluation of accuracy and reproducibility of teletherapy doses by in vivo dosimetry" Iranian Journal of Medical Physics, 2003: 1(1):9-17
31. "Comparison of the different computer speed in calculating of Co-60 depth dose by MCNP4A and MCNP4B Monte Carlo codes". Journal of Babol university of Medical Sciences 2004: 6(3):7-11
32. "Evaluation and measurement of Co-60 gamma ray for the inactivation of lymphocytes". Journal of Iran university of medical sciences, 2003:10(35):397-405

## **Abstract Published**

1. "Melatonin as a protective agent in spinal cord damage after gamma irradiation" Radiotherapy and Oncology, Journal of European Society for Therapeutic Radiology and Oncology, March 2009, Vol 90, Suppl 3
2. "CT simulation role in radiation therapy dosimetry" Journal of Radiological Sciences, April 2008, vol 1, Issue 2
3. "Simulation of increment in skin exit dose due to base plate in radiotherapy by Monte Carlo method" Journal of Radiological Sciences, April 2008, vol 1, Issue 2
4. "Presentation of nursing oncology in Babol". International Journal of Hematology-Oncology & Bone Marrow Transplantation, 2007, Vol. 4, Suppl. 1.
5. "Long term changes of prostacyclin in radiation myelopathy". 6<sup>th</sup> LOWRAD international conference, 2007
6. "The role of CT simulation in radiotherapy treatment planning". Iranian Journal of Radiology, 2007, Vol. 4, Suppl. 2
7. "Thermoluminescence dosimeter response". Journal of Rafsanjan University of Medical Sciences, Summer 2006, Vol. 5, No.2, special supplement
8. "Response of prostacyclin to low dose irradiation in the development of radiation myelopathy". European journal of cancer (EJC) Supplements 2005; Vol 3 N0 2 Oct. 2005
9. "Short term changes in prostacyclin secretory profile of irradiated rat cervical spinal cord" Toxicology and Applied Pharmacology 197 (2004) page 211
10. "Comparison between Co60 and Cs 137 radiations doses for lymphocyte inactivating". Physica medica EFOMP

## **Abstract Presented In Congress**

- The Role of MRSI in Clinical Target Volume Assessment for Radiotherapy of Prostate Cancer. 28<sup>th</sup> Iranian Congress of Radiology, Tehran, Iran, 15-18 May 2012
- GYN brachytherapy training phantom. 4<sup>th</sup> annual congress of the Iranian Society of Gynecological Oncology, Tehran, Iran, June 19-21, 2012

- Medical Physics role in Medical Laser application. 6<sup>th</sup> annual congress of Iranian Medical Laser Association, 29-30 Dec, 2011
- Development of a tool for converting MRS images to DICOM file. 17<sup>th</sup> Iranian Conference on Biomedical Engineering, 3-4 Nov. 2010
- Comparison between two methods of treatment plannings for Cranio-Spinal Irradiation. Persian Gulf Biotechnology Park, Queshm, 17-18, 2010
- Melatonin as a protective agent in spinal cord damage after gamma irradiation. Fourth International Conference on Translational Research and Pre-Clinical Strategies in Radiation Oncology – Geneva, March 11-13 2009
- Radiotherapy data workflow: Data Formats, Networking and Archiving. Imam Khomeini Imaging center, Tehran, Iran, January 2009
- Image based radiation therapy. Digital imaging treatment planning Seminar, Imam Khomeini Imaging center, Tehran, Iran, April 2008
- Investigation of vascular endothelial growth factor gene expression in irradiated rat cervical spinal cord. The 6<sup>th</sup> Congress of the Iranian Radiographic Sciences Association (6icrsa). Homa Hotel Shiraz, April 25-26/2008.
- Simulation of increment in skin exit dose due to base plate in radiotherapy by Monte Carlo method. The 6<sup>th</sup> Congress of the Iranian Radiographic Sciences Association (6icrsa). Homa Hotel Shiraz, April 25-26/2008.
- CT Simulation Role in Radiation Therapy Dosimetry. The 6<sup>th</sup> Congress of the Iranian Radiographic Sciences Association (6icrsa). Homa Hotel Shiraz, April 25-26/2008.
- Presentation of nursing oncology in Babol. 19<sup>th</sup> Asia, Pacific, Cancer Conference, APCC 2007, Nov. 15-17, 2007, Tehran, Iran
- Application of 3D treatment planning in head and neck radiotherapy, Congress of head and neck tumors, 18<sup>th</sup> annual cancer congress, cancer research center, 26-26, Oct., Tehran, Iran
- The role of CT simulation in radiotherapy treatment planning. Imaging Informatics Conference, Tehran, Iran
- Long term study of prostacyclin changes in radiation myelopathy. Neuro Oncology Congress, 22-24 Dec., Sh. Beheshti Medical University Cancer Research Center
- Quality dependence of LiF thermoluminescence dosimeter response. 1<sup>st</sup> human, life and radiation conference, 29-31 Oct., Rafsanjan, Iran



- Chronological response of prostacyclin changes to low-moderate doses of radiation in Rat cervical spinal cord. 2<sup>nd</sup> European IRPA congress on radiation protection, 15-19 may, Paris, France
- Short term changes in Prostacyclin secretory profile of irradiated Rat cervical spinal cord. 10<sup>th</sup> International congress of toxicology 11-15 july, Tempere, Finland
- Dosimetry in radiobiology. 6<sup>th</sup> Iranian congress of medical physics, held at Mashhad University of Medical Sciences
- Radiation myelopathy: a radiobiological review. Current achievements in oncology congress, 6-8 Nov., Poznan- Poland
- Lymphocyte inactivating Co60 radiation dose. 8<sup>th</sup> European congress of Medical Physics, 20-23 May, Eindhoven University of Technology- The Netherlands
- Comparison between two methods of shielded fields calculations. 1<sup>st</sup> int. congress of radiation applications in treatment and diagnosis, 18-20 Oct., Sh. Beheshti University of Medical Sciences
- Application of Sr89 in bone metastasis. 4<sup>th</sup> congress of Biochemistry, Babol university of medical sciences
- Accuracy and Reproducibility assessment of treatment fields in tele-radiotherapy. 3<sup>rd</sup> Iranian congress of Medical Physics, Iran University of Medical Sciences

## **Thesis supervisor**

- 2011(1390)- " Evaluation of Diagnostic reference Level on CT Scan Examination in the City of Tehran" MSc student of Medical Physics, Tehran University of Medical Sciences
- 2011(1390)- " Organ body dose simulation using Monte Carlo EGS5 and human anthropomorphic phantom and benchmarking with TLD" MSc student of Medical Radiation engineering, Sharif University, Tehran
- 2011(1390)- " Dose simulation in different body parts in radiotherapy using Fluka Monte Carlo code on human phantom and benchmarking with TLD. MSc student of Medical Radiation engineering, Sharif University, Tehran
- 2011(1390)-" " Dose simulation in different body parts in radiotherapy using BEAM Monte Carlo code on human phantom and benchmarking

- with TLD. MSc student of Medical Radiation engineering, Sharif University, Tehran
- 2010(1389)- "Dosimetric characterization of enhanced dynamic wedge implementation in radiation therapy of a heterogeneous phantom by measurement and Monte Carlo calculation" PhD student of Tehran (ex. Iran) University of Medical Sciences, Tehran
- 2010(1389)- "Numerical solution of bio-heat equation for optimization of thermal dose distribution in hyperthermia" PhD student, AZAD Uni., Tehran
- 2009(1388)- "Dynamic wedge dosimetry in chest wall irradiation" MSc student of medical radiation, AZAD Uni., Tehran
- 2009(1388)- "Comparison of conformal fields dosimetric parameters between 3D TPS..." MSc student of medical radiation, AZAD Uni., Tehran
- 2009(1388)- "Comparison of dosimetric parameters obtained by measurement, Coreplan 3D ...." MSc student of medical radiation, AZAD Uni., Tehran
- 2009(1388)- "MRS role in target definition of Brain tumour treatment planning" MSc student of medical radiation, AZAD Uni., Tehran
- 2009(1388)- "Simulation and Experimental Evaluation of Dose Enhanced Radiation Sensitivity in Prostate Cancer by Gold Nanoparticles in Mice" PhD of Medical Physics, Tehran University of Medical Sciences
- 2008(1387) - "Optimization of ethanol-chlorobenzene mass attenuation coefficient as a dosimeter for whole blood irradiation in Gamma-cell..." Iran University of Medical Sciences  
MSc of Medical Physics, Iran Uni. Of Medical Sciences
- 2008(1387) - "Comparison of TRS-398 and AAPM-59 protocols for photon and electron beams with...." MSc of Physics, Mazandaran science university

### **Thesis co-supervision**

- 2011(1389)- "Synergic effect of Iron Oxide nanoparticle with 5FU polymeric cover and 6MV x-ray on human prostate cancer cell of DU-145" MSc of Medical Physics, Tehran Uni. of Medical Sciences, Tehran

- 2010(1389)- " the evaluation of dose– effect relationship for radiotherapy-induced thyroid toxicity in head and neck cancer with Functional assay according to the NTCP models" PhD thesis of Tarbiat Moddaress University, Tehran
- 2010(1388)- "Radiobiological determination of direct damage in DNA, by I-131 and comparing to Monte Carlo simulation in Glioblastoma cells in monolayer cell culture" MSc of Medical Physics, Iran Uni. of Medical Sciences, Tehran
- 2010(1388)- "An alternative method for determination of requirement for using wedge in post mastectomy radiotherapy and Mont Carlo simulation" MSc of medical radiation, AZAD Uni., Tehran
- 2010(1388)-"Evaluation and analytical comparison of different 2D and 3D radiotherapeutic Treatment Planning Systems using Monte Carlo simulation and dosimetry with anthropomorphic thoracic phantom based on IAEA TEC-DOC 1583 protocol " MSc of medical radiation, AZAD Uni., Tehran
- 2010(1388)- " Design and fabrication of the IRA–<sup>103</sup>Pd eye plaque..." PhD of Medical Radiation, AZAD Uni., Tehran
- 2009(1387)-" Spectral and dose distribution analysis of neutron and electron contamination produced in medical linear electron accelerators
- 2009(1387)-" Construction and development of a chemical dosimeter based on the radiochromic solid polymer and evaluation of it's response to high energy photons used in radiotherapy" PhD of Medical Physics, Tarbiat Moddaress University
- 2009 (1388)- " The role of magnetic resonance spectroscopic imaging in the physical treatment planning of target volume definition in prostate cancer " MSc of Medical Physics, Iran Uni. of Medical Sciences
- 2009(1388)- "Dose enhancement effect of Iron oxide nano-particles on the prostate cancer cell survival" MSc of Medical Physics, Iran Uni. of Medical Sciences
- 2009(1388)- " Radiobiological determination of direct damage in DNA" MSc of Medical Physics, Iran Uni. of Medical Sciences
- 2008(1387) -“ Determination of relative biological effectiveness of I-131 against Co-60 for ...” MSc of Medical Physics, Iran Uni. Of Medical Sciences
- 2006(1385) - “ Study of melatonin effect on TNF-alpha and UEGF genes expressions and radiation induced vascular changes on rat

- cervical spinal cord". PhD of medical physics, Tehrn University of Medical Sciences
- 2005(1384)- "Optimization of TLD response to different beam qualities" MSc student of medical radiation, AZAD Uni., Tehran
- 2005 (1383) - " Dosimetry of the adjacent fields in radiotherapy of the breast cancer patients". MSc of medical physics, Iran University of Medical Sciences
- 2005 (1383) - " Ovarian received scatter dose in radiotherapy patients". MSc of medical physics, Iran University of Medical Sciences
- 2005 (1383) - "Energy dependency assessment of TLD correction factors". MSc of medical radiation engineering, Azad University of Tehran.
- 2004 (1383) - "Feasibility study of tangential chest wall Portal imaging contrast enhancement for radiotherapy patients using MATLAB programming". MSc of medical radiation engineering, Azad university of Tehran
- 2001(1381) - "Measurement of contra-lateral breast dose in radiation treatment of chest wall in mastectomised patients". MSc student of medical physics, Iran University of Medical Sciences