

Jahangir A. Satti
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PRESENT POSITION: Medical Physicist/Assistant Clinical Professor at Albany Medical Center and College, Albany New York, USA.

Associated Faculty - Center for X-Ray Optics State University of NY, Albany
Diplomat American Board of Radiology 2006
Re-certification (MOC) 2016

EDUCATION:

Stanford University Palo Alto, California 2000-2001
Post Doc Fellow in Radiation Oncology at Stanford University Medical School
University of Michigan Ann Arbor, Michigan 1998-2000
Post Doc in Diagnostic Radiology at University of Michigan Medical Center
Wayne State University Detroit, Michigan 1986-1992

- Ph.D. Computer Engineering 1991-1992
- M.S. Medical Physics 1987-1991
- M.S. Computer Engineering 1986-1987

Honors: Wayne State University Detroit, Michigan

- USAID Scholarship 1986-1988
- Graduate professional Scholarship 1988-1989
- Graduate professional Scholarship 1989-1990

License:

- **The University of the State of New York, Education Department**
- Licensed Medical Physicist – Therapeutic Radiological
- **License Number 000304** - Valid April 2018.
- **State of California – Department of Health Services**
- Approved Physicist List for Therapy Machine Calibration

Clinical Experience in Medical Physics:

- *Albany Medical Center, Albany, NY Nov. 2005 – present*
- *St. Joseph's Medical Center Stockton, CA. Dec. 2002 – August 2005*
Chief Medical Physicist and Radiation Safety Officer
- *Memorial Hospitals Association Modesto, CA, July 2001- Dec. 2002*
Medical Physicist
- Curesoft – Medical Software Development, Detroit Michigan, 1996-1998
Established my own business
- *Universiti Sains Malaysia, Kota Bharu, Malaysia, Dec. 1994 - Jan. 1996*
Medical Physicist

Radiation Therapy Physics:

- Implementation of Stereotactic Radiosurgery on Varian TrueBeam with BrainLab (conformal) and Eclipse (cones) Planning systems
- Implementation of IMRT from scratch to dose delivery including evaluation of systems and networking of computers.

- Commissioning of BrainLab's microMultiLeaf (m3) on Varian Linac.
- Commissioning of Varian Clinac 2100C linear accelerator.
- Commissioning of Varian Clinac 21iX with OBI and respiratory gating.
- Commissioning of ADAC treatment planning system for photon, electron beams and Brachytherapy.
- Commissioning of in-vivo dosimetry.
- Commissioning of High Dose Rate Brachytherapy.

QA: Weekly protea for photon and electron beams. Monthly Mechanical checks. OBI, MLC etc.

1. Varian TrueBeam Linac.
2. Siemen's Mevatron Linac.
3. Philips'/Elekta SL18 Digital Linac.
4. Varian's 6/100 Linac.
5. Varian's 2100C Clinac.
6. Varian's Cliniac 2100 EX.
7. Oldeflt Simulator-MC.
8. Philips's CT Simulator.
9. Full calibration of linear accelerators using TG-51.
10. Full calibration of Oldeflt Therapx 3 superficial therapy unit.
11. Multidata, PTW and Wellhoefer water scanning systems.
12. X-ray and electron dosimetry using AAPM protocol TG-21 and TG-51.
13. QA with ArcCheck, MapCheck. Profiler 2.
14. Radiation shielding computation and survey of installations.
15. Acceptance testing and commissioning of Siemen's Digital Mevatron 6 MV linear accelerator,
16. Simulator Mevasiml-S, Siemen's Somatom HiQ-S Therapy Scanner.

Dose measurement and analysis to a fetus during Co-60 treatment for Hodgkin's disease.

RITS QA system for flatness and symmetry, IMRT QA.

PTW 2D Array.

C-Track Calibration.

HDR Gammamed 12i Calibration

HDR Nucletron's Micro Selectron V3 Calibration.

SonArray Ultrasound System Calibration.

Beta Cathlab for Intravascular Brachytherapy.

I-125 Eye Plaque.

Radio Iodine Therapy Radiation Safety and Management.

Treatment Planning etc:

- ADAC Pinnacle TPS: CT-based 3D and external contour based treatment planning SmartArc, SBRT.
- Eclipse 13.1 and ARIA.
- BrainLAB (BrainSCAN v.5.31, RT Dose and BrainLAB iPlan 2.0) for Stereotactic Radiosurgery planning for Arc, IMRS and static treatment of brain tumors (fractionated conformal therapy for tumors adjacent to brainstem and optic chiasm), and AVM using cones and MLCs on Linac.
- Theraplan TPS: CT-based 3D and external contour based treatment planning.
- Multidata TPS: CTPP Based 3D and external contour based treatment planning.
- IMRT Treatment Planning (ADAC and Corvus System). IMRT planning and QA for prostate, inguinal nodes, breast, head/neck tumors.
- Brachytherapy Planning using ABACUS.

- Brachytherapy Planning Plato treatment planning system ver 5.3.3.
 - Independent dose calculation for photon beams.
 - Electron dose calculations for various cone and block sizes.
 - Elekta's MLC Prescription Preparation release 1.1.0.
11. VARiS 6.1.
 12. IMPAC/Mosaiq.
 13. Patient chart checking.
 14. Block cutting for electron cones and photon beams shielding.

Diagnostic Imaging Physics.

1. Acceptance testing and QA of:
Radiographic units. Bi-Plane Cath. Units. CT scanners. Mammographic units. Fluoroscopic and Tomographic units. C-arm. Ultrasound. Plate Readers. Film Processors. Monitors.
2. Shielding Computation for:
X-ray unit. Bi-plane Cath. lab. CT Scanner. Mammographic unit. Dental unit.
3. Dose calculations i). Effective dose for Cardiac Cath. Procedure using "View-by-View Analysis of an Examination Method" ii). Fetus dose during multiple radiographic x-ray procedures.
4. Establishment of QA in Diagnostic Radiology.

Computer Skills:

Visual C#, Visual C++, Sql Server database management system, BASIC, FORTRAN, Pascal, Prolog, Access, Excel, MS, etc
Word, Macromedia (Dreamweaver, Fireworks, Flash), SPSS, SAS and MS Visual Studio.
AHPL (A Hardware Programming Language), Assembly Language and Machine Language(for Intel family of processors and support chips).

Software Projects. Developed a variety of projects in different languages both for commercial uses and as tools to solve scientific problems. Recently I have finished four window-based projects:

1. Radiation shielding calculation for a helical CT scanner.
2. Dose calculation to the breast during mammographic procedures.
3. Web-Based Distant Learning Program.
4. Web sites using Macromedia (Dreamweaver and Fireworks).
5. MU Calculator for photon dosimetry.

Hardware Projects.

1. Interface for a microprocessor based controller for neutron monitoring in a 10 MW Research Reactor.
2. Data encryption system for digital communication.

TEACHING EXPERIENCE:

1. St. Joseph's Medical Center, Stockton, California 2003-2005
2. Memorial Hospitals Modesto, California, USA 2002.
3. Schoolcraft College, Livonia, Michigan, USA 1999.
4. School of Medicine, Malaysian Science University, Malaysia, 1994-1996.
5. United Nations Development Program, Pakistan, 1993-1994.
6. Department of Computer Science, AJK University, Pakistan. 1992-1994.
7. Department of Physics, AJK University, Pakistan 1992-94.
8. Department of Electrical and Electronics Engineering, AJK University, Pakistan, 1982-1986.

SEMINARS/WORKSHOPS:

University Grants Commission Campus Islamabad, Pakistan

Computer System Software and Hardware, 1983-84.
USAID Academy for Educational Development, Pakistan
Intensive Course in English for Academic Purposes, 1986.

TRAINING:

Varian Medical Systems, Las Vegas

Eclipse Based Cone Planning for Physicists Jan-Feb., 2017

Varian Medical Systems, Las Vegas

TrueBeam Platform for Physicists v2.5 (C) Nov. 28, 2016 to Dec. 02, 2016

BrainLab Academy Chicago.

Weeklong training in Treatment Planning and Physics 11/9/2012.

Varian Medical Systems, Las Vegas

OBI Physics Course May 19 – May 23, 2008

BrainLab Academy, Chicago

Treatment Planning and Physics. One Week Dec. 2007

Varian Medical Systems

Application Training Session(s) for OBI, Nov. 21, 2006

MammoSite Radiation Therapy Clinical Training

Clinical Training Program, July 9, 2005

Modular Emergency Response Radiological Transport Training

Train the Trainer, 22nd January 2004, Stockton, CA, USA

Radiological Imaging Technology, Colorado Springs, USA.

RIT113 Training Class with IMRT, June 6, 2003

Varian Medical Systems

Clinical Implementation of IMRT Seminar, June 6, 2002

ADAC Laboratories, Milpitas, CA, USA

Pinnacle Treatment Planning System Workshop for Physicist Oct. 2001.

Stanford University Department of Radiation Oncology, Stanford, CA, USA

Intensity Modulated Radiation Therapy Short Course, Jan. 25-27, 2001.

American Association of Physicists in Medicine Summer School, Sonoma, CA

Practical Digital Imaging and PACS, June 26-July 1, 1999.

MTMI of Medical College of Wisconsin, New York, USA

Mammography: A Course for Physicists, May 16-17, 1998.

Commission on Accreditation of Medical Physics Education Program, Inc.

Hands-On Ultrasound QA Workshop, May 14, 1998.

International Atomic Energy Agency Regional Seminar, Bangkok, Thailand

Radiation Dose in Radiotherapy from Prescription to Delivery, 1995.

American Association of Physicists in Medicine Summer School, Austin, Texas

Computers in Medical Physics, July 31-Aug. 5, 1988.

Agency for International Development, Los Angeles, California, USA

Mid-Winter Community Seminar Dec. 20-29, 1987.

RESEARCH WORK:

Ph.D. dissertation: Parallel processing architecture for 3D dose calculation in radiation therapy treatment planning based on recruit demand strategy, 1992.

Papaers

1. Satti J. A., "Misalignment of radiation field and light field in a radiographic x-ray unit a case report", Malaysia Journal of Medical Sciences Vol. 4, No. 1, Jan 1997, p.80-82
2. Khan U. A., Satti J. A., Khan R., "The detection of pseudo sorcery problems in psychiatric patients", Malaysian Journal of Medical Sciences, Vol., 3, No. 1, 1996.
3. Harrigan M.R., Satti J. A., Deveikis J. P., and Thompson B. G., "Effect of hematocrit on calculation of cerebral blood flow and lambda in Xenon CT", Keio (Japan) J Med 2000 Feb; 49 Suppl. 1:A36-37.
4. Christodoulou E., Goodsitt M., Larson S., Darner K., Satti J., and Chan H-P., "Evaluation of the transmitted exposure through lead equivalent aprons used in a radiology department, including the contribution from backscatter", Medical Physics 30(6):June, 2003;p.1033-1038.
5. Jahangir Satti, Homeopathic Drug Standardization. Seminars in Integrative Medicine (Elsevier). Vol. 3. No. 4. pp. 113-122. Dec. 2005.
6. Jahangir Satti. The Emerging Low-Dose Therapy for Advanced Cancers. Dose-Response 2009; 7(3): 208–220.
7. Jahangir Satti. Practical Implications of Nanodosimetry in Medicine. Dose-Response (online).
8. W. K. Raja, Jahangir Satti, Gang Liu and J. Castracane, "Dose response of MTLn3 cells to nanoscale dilutions of arsenic trioxide and ionizing radiation", online, Dose Response, (2011).
9. Abbas H., Dip M., Satti J., and Macdomald C., "Measurements and Simulations of Focused Beam for Orthovoltage Therapy" Medical Physics. 2014 Apr;41(4):

Full length Proceeding Papers:

1. Satti J. A., Westervelt F.H. and Ragan D.P., "A proposed parallel architecture for 3D dose computation in radiation therapy treatment planning", Proc. 4th Ann. IEEE/CBMS, 1991, p. 258-262.
2. Satti J. A. and Westervelt F. "Real time dose calculations in radiation therapy treatment planning", Proc. An. Int. Conf. Of IEEE/EMBS Vol. 13, No. 3, 1991, p.1238-1239.
3. Satti J. A. and Shuaib I. L., "Design of a computer-based integrated radiology information system", Proc. Of 7th Asian & Oceanian Congress of Radiology, Kuala Lumpur, Malaysia, May 28-June 1, 1995.
4. Satti J. A., "Use of ionizing chambers' inter-comparison technique for electron dosimetry in water phantom", IAEA E-2-SR-192, p. 13-14, Geneva, 1995.
5. Satti J. A., "Parallel beam mapping algorithm to compute radiation dose in three dimension treatment planning", Proc. 9' IEEE/CBMS, 1996, p.24-29.
6. Mohammad R. Moghal, Mohammad S. Mian, and Jahangir A. Satti, "Adaptive QoS-based load sharing in multisession video-conferencing distributed multimedia system," Distributed Multimedia System DMS 2003, Florida.
7. Jahangir Satti, "Nano-scale drug processing simulation based on non-linear threshold model", International Congress of Nanotechnology-October 30-November 2, 2006 - San Francisco USA Proceeding-ICNT2006-P-BIO-524.

Abstracts:

1. Satti J. A., "Radiation safety database system for a network of hospitals", Med. Phys., Vol. 17, No. 3, p.541.
2. Satti J. A., Westervelt F.H. and Ragan D.P., "Parallel processing computer architecture for 3D radiation treatment plan", Med. Phys. Vol. 18, No.3, p.626.
3. Satti J. A. and Mohammad A. R., "Radiation protection issues for thyroid patients treated with Iodine-131 in Islamic cultures" (abstract) 28 the Annual & 3rd Int. Convention IMANA, Kuala

Lumpur Malaysia, July 9-July 14, 1995.

4. Satti J. A., "Protocols for ionizing radiation safety around medical linear accelerator at Universiti Sains Malaysia", Proc. Nat. Conf. Med. Sci., June 11-12, 1995

5. Satti J. A., "Guidelines for requirement analysis of quality control in diagnostic radiology" (abstract) Nat. Symp. On Med. Phys. Malaysia.

6. Satti J. A., "Experience of implementation of AAPM protocol TG-21 for x-ray and electron beams" Proc. National Seminar on Quality Assurance in the Medical Use of Ionizing Radiation, Malaysia, Nov. 22-23, 1995.

7. Satti J. A., "Design of database management system for film movement in a university hospital", Med. Phys. Vol. 23, No. 6, June 1996., p.145.

8. Satti J. A., "Seeks caution in light of power line research" (letter), Alt. Therp. Vol. 2, No. 4, 1996, p.22.

9. Satti J. A., "Radiation protection status around diagnostic machines in Malaysian Science University Hospital", Health Physics Society 30 the Midyear Topical Meeting, Jan. 1997, USA.

10. Satti J. A., Goodsitt M., Christodoulou M., and Chan, H-P., "Radiation transmission through lead equivalent aprons used in cardiac catheterization laboratory" Med. Phys. Vol. 26, No. 6, June

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1999, p. 1123.

11. Satti J. A., Xing L., Quarashi M., and Goodsitt M., "Development of a window-based shielding computation program for a multi-slice CT scanner", 43rd AAPM Annual Meeting, July 22-26, 2001.

12. Satti J. A. and Xing L., "Evaluation of quality assurance by utilizing positional variation in IMRT", 43d AAPM Annual Meeting, July 22-26, 2001.

13. Xing L., Li J., Satti J., Li J., Chen Y., Luxton G. and Boyer A., "Inverted Field and Its Application to the Verification of Monitor Unit Calculation in Intensity Modulated Radiation Therapy", 43d AAPM Annual Meeting, July 22-26, 2001.

14. Satti, J.A., "Complementary nano-scale therapeutic approach through frequency based biosynchronization",

3rd International Conference on Non-Linear Dose-Response Relationships in

Biology, Toxicology and Medicine, June 8 -10, 2004, at the University of Massachusetts, Amherst.

15. Satti, J.A., "A comparative study of drug standardization in hormetic observations and homeopathic provings", *3rd International Conference on Non-Linear Dose-Response Relationships in Biology, Toxicology and Medicine*, June 8 - 10, 2004, at the University of Massachusetts, Amherst.

16. Jahangir Satti, Mark Hoffman, and Masoud Qureshi, "Window-based MU calculator for independent dosimetry check in routine radiation oncology practice" IAEA conference 2006, Vienna, Austria.

17. Jahangir Satti, and Mohammad Riaz Moghal, Radiation shielding barrier computation for multislice CT scanners used in medical imaging. Int. Conf. Physics and World Today, Karachi, Pakistan, Dec. 18 - 22, 2008.

18. Jahangir Satti, Hassan Abbas and Mohammad Riaz Moghal. Positional effects of heterogeneous materials in stereotactic radiosurgical fields. Int. Conf. Physics and World Today, Karachi, Pakistan, Dec. 18 - 22, 2008.

19. H. Abbas, J. Satti,, C. MacDonald. Comparison of MCNP5 Calculations in the Buildup Region with Plane Parallel Ionization Chamber Measurements for 6 and 18 MV Photon Beams.

20. H. Abbas, D. Mahato, J. Satti, C. MacDonald Potential for Focused Low Energy X-Ray Beam for Therapy. AAPM meeting 2012.

Affiliations:

1. American Association of Physicists in Medicine (AAPM), USA.