

James R. Marbach, Ph.D., DABR

Contact Info

International Medical Physics Services
3307 Falling Creek
San Antonio, TX 78259-2169
jrmarbach@satx.rr.com

Education

- 1978 Ph.D. in Biomedical Sciences (Medical Physics), The University of Texas Health Science Center Houston
- 1975 M.S. in Medical Physics, University of Texas Health Science Center Houston
- 1959 B.S. in Physics, St. Mary's University, San Antonio, TX

Employment

- 2000 - Present **International Medical Physics Services – San Antonio, TX**
Partner
Responsibilities include all aspects of medical physics as well as providing individual patient medical physics consultation to staff radiation oncologists as requested. Provide recommendations for equipment purchases, therapy room design, quality assurance procedures, and general clinical medical physics practice. Qualified in special procedures, including HDR, LDR (with Cesium, Iridium and Iodine), IVBT (both Novoste and Guidant Galileo), COMS Iodine Eye Plaque and LINAC based radiosurgery, as well as QA procedures relevant to all these.
- 1998 - 2000 **Radiological Physics Associates – San Antonio, TX**
Medical Physicist
Radiological Physicist at Wilford Hall Medical Center. Provided calibration and QA for two radiotherapy machines at this facility. Performed treatment planning on TBI, TBE, prostate Brachytherapy, and LINAC radiosurgery as well as conventional treatment. Offered consultations and machine calibrations as required by other company contracts.
- 1993 - 1998 **Cancer Therapy and Research Center – San Antonio, TX**
Associate Physicist.
Provided physics treatment planning consultation, dosimetry and follow-up for patients under the care of four radiation oncologists at the center. Performed calibration and QA for ten radiotherapy machines in three facilities. Provide didactic and tutorial physics instruction to residents and graduate students from the University Texas Health Science Center San Antonio.
- 1991 - 1993 **Nucletron Cooperation - Columbia, MD**
Director-Technical Services/Development
Responsible for service, repair, and customer training for all equipment sold by Nucletron in the western hemisphere and for customer training. Acted as clinical expert to the president of Nucletron Corporation and to the managing director of Nucletron B.V., Holland.

- 1984 - 1991 **Humana Hospital-Clear Lake - Webster, TX**
Chief Physicist
Supervised the setup and installation of new equipment in the Department of Radiation Oncology. Provided all physics services relevant to all patient treatment including all dosimetry. Provided instruction and supervision to therapy technologist within the department. Served as Radiation and Laser Safety Officer to Humana Hospital-Clear Lake. Purchased, commissioned and treated the first patient in the USA with the Nucletron low dose-rate remote afterloading brachytherapy device.
- 1978 - 1984 **M.D. Anderson Hospital and Tumor Institute - Houston, TX**
Assistant Clinical Physicist
Served as lead physicist on the experimental neutron patient therapy program. This included supervision of all dosimetry, participation in all treatments, and licensing of the facility for use.. Incorporated all relevant neutron dosimetry data into the RAD-8 treatment planning computer. Verified the algorithms and used this system for patient dosimetry. Responsible for incorporating the use of laser alignment lights in Radiotherapy (fourteen treatment and simulation rooms). Installed all the lasers and devised the set-up and adjustment procedure and maintained all systems. Studied the effects of radiation therapy on cardiac pacemakers and established hospital procedures for treating patients with pacemakers. Evaluated the first remote afterloading brachytherapy device eventually incorporated into routine clinical use at the institution.
- 1975 - 1978 **Veterans Administration Hospital - Houston, TX**
Physicist
Performed all measurements requisite to commissioning the therapy equipment in the new department of radiotherapy, including a cobalt-60 machine, an orthovoltage machine, and a simulator. Assisted with all radioactive gold grain implants. Provided all physics and dosimetry services to the facility.
- 1973 - 1975 **University of Texas Health Science Center Houston, Graduate School of Biomedical Sciences**
Graduate Research Assistant
- 1969 - 1973 **Lockheed Electronics Company - Houston, TX**
Principal Engineer
Assisted in the design of a high-altitude balloon package to measure the primary cosmic radiation in the 5-5000 gev energy range. Assisted in the design of the detector system used in a proton/electron spectrometer flown on the three NASA Skylab spaceflights. Provided engineering support for the NASA Infrared Scanner System employed on the Skylab missions.
- 1968 - 1969 **Scientific Engineering Company Inc. - Austin, TX**
Staff Engineer
Assisted in the design and manufacture of commercial laboratory instrumentation for nuclear physics research.
- 1963 - 1968 **Johnson Space Center, NASA - Houston, TX**
Aerospace Technologist
Performed testing and calibration of a radiation experiment flown on the MA-9 Mercury manned spacecraft to measure the radiation environment external to the vehicle. Devised and was principal investigator on experiments to measure the proton and electron environments external to the Gemini IV and the Gemini VII manned spacecraft. Devised and

directed development of an electron spectrometer that was flown aboard the Gemini X and Gemini XII spacecraft. Acting Head, Experiments and Analysis Section, Space Physics Division. Managed experimental radiation measurement investigations

1959 - 1963

Air Force School of Aerospace Medicine, Brooks Air Force Base – San Antonio, TX

Physicist.

Participated in research studies of the biological effects of cosmic radiation. Set-up nuclear emulsion facilities and analyzed emulsion flown aboard the sub-orbital SAM monkey rocket. Assisted in the development of human biophysical monitoring system for Air Force pilots.

Certification and Licensure

Certification

1994

American Board of Radiology - Therapeutic Radiological Physics

Licensure

Licensed in Therapeutic Medical Physics in the State of Texas (1993-Present)

Books and/or Chapters

Co-author with Michael Hardige, MSEE, of Chapter entitled "The Pacemaker Patient in the Therapeutic and Diagnostic Device Environment", In Modern Cardiac Pacing. Serge Barold, M.D., ed., Futura Publishing Company, 1985.

Selected Publications

Marbach, J. R., An Electron Spectrometer for Project Gemini. *IEEE Transactions on Nuclear Science*. Feb-April: 464-467, 1966.

Marbach, J. R., C. S. Warren, and R. S. Lindsey, Evidence of Non-Fission Electrons in the South Atlantic Anomaly. *Journal of Geophysical Research*. 73(11):3477-3481, 1968.

Marbach, J. R. and P. R. Almond, Scattered Photons as the Cause of the Observed dmax Shift with Field Size in High Energy Photon Beams. *Medical Physics*. 4(4):310-314, 1977.

Marbach, J. R. and P.R. Hudgins, An Empirical Table of Equivalent Squares of Rectangular Fields for the Theratron 780. *British Journal of Radiology*. 50:360-362, 1977.

Marbach, J. R., R. T. Meoz-Mendez, J. K Huffman, P. T. Hudgins and P. R. Almond, The Effects on Cardiac Pacemakers of Ionizing Radiation and Electromagnetic Interference from Radiotherapy Machines. *International Journal of Radiation Oncology, Biology Physics*. 4:1055-1058, 1978.

Marbach, J. R. and P. R. Almond, Optimization of Field Flatness and Depth Dose for Therapy Electron Beams. *Physics in Medicine and Biology*. 26 (3):435-443, 1981.

Marbach, J. R., M. R. Sontag, J. Van Dyk and A. B. Wolbarst, Management of Radiation Oncology Patients with Implanted Cardiac Pacemakers: Report of Task Group 34. *Medical Physics*. 21(1):85-90, 1994.