

CURRICULUM VITAE FOR
RAYMOND R. RAYLMAN, Ph.D.

EDUCATION

- 1986-91 Doctor of Philosophy, Physics
 University of Michigan, Ann Arbor, MI
- 1983-86 Master of Science, Physics
 University of Michigan, Ann Arbor, MI
- 1979-83 Bachelor of Science with Distinction and Honors in Physics
 University of Michigan, Ann Arbor, MI
- 1975-79 Herricks High School, New Hyde Park, NY

POSTDOCTORAL TRAINING

- 1994-95 National Cancer Institute Postdoctoral Research Fellow
 Nuclear Medicine Research Laboratory, Division of Nuclear Medicine
 University of Michigan, Ann Arbor, MI
 (Mentor: R.L. Wahl)
- 1993-94 Elsa U. Pardee Research Fellow
 The Pardee Foundation
 Nuclear Medicine Research Laboratory, Division of Nuclear Medicine
 University of Michigan, Ann Arbor, MI
 (Mentor: R.L. Wahl)
- 1991-93 National Cancer Institute Postdoctoral Research Fellow
 Nuclear Medicine Research Laboratory, Division of Nuclear Medicine
 University of Michigan, Ann Arbor, MI
 (Mentor: G.D. Hutchins)

ACADEMIC POSITIONS

- 2006-Present Professor (Tenured) Department of Radiology, West Virginia
 University, Morgantown, WV
- 2005-Present Adjunct Associate Professor Department of Physics, West Virginia
 University, Morgantown, WV
- 2001-Present Vice Chair for Research Department of Radiology, West Virginia University,
 Morgantown, WV
- 2004- 2005 Scientific Advisor, IntraMedical, LLC, Los Angeles, CA

- 2001-2006 Associate Professor (Tenured) Department of Radiology, West Virginia University, Morgantown, WV
- 2000-2005 Adjunct Assistant Professor Department of Physics, West Virginia University, Morgantown, WV
- 1998-2001 Research Director, Center for Advanced Imaging
Department of Radiology, West Virginia University, Morgantown, WV
- 1996-2001 Assistant Professor
Department of Radiology, West Virginia University, Morgantown, WV
- 1995-96 Research Associate
Nuclear Medicine Research Laboratory, Division of Nuclear Medicine,
University of Michigan, Ann Arbor, MI

HONORS AND AWARDS

- 1994 Inclusion of Who's Who in the Midwest
- 1986 Physics Department Teaching Award
Department of Physics, University of Michigan, Ann Arbor, MI
- 1984 Graduate Student Fellowship Award
Department of Physics, University of Michigan, Ann Arbor, MI
- 1983 Graduate Student Fellowship Award
Department of Physics, University of Michigan, Ann Arbor, MI

ADMINISTRATIVE ACTIVITIES

- 2007-Present Member, Promotion and Tenure Committee
Department of Radiology, West Virginia University, Morgantown, WV
- 2006 Vice-Chair, Promotion and Tenure Committee
School of Medicine, West Virginia University, Morgantown, WV
- 2005-2006 Chair and Chief Organizer of the Third International Workshop on the Nuclear Radiology of Breast Cancer, to be held in San Diego, CA, October 23, 2006
- 2001-2005 Member, Promotion and Tenure Committee
School of Medicine, West Virginia University, Morgantown, WV
- 2000-2001 Member, Promotion and Tenure Committee
Department of Radiology, West Virginia University, Morgantown, WV

- 2000-2003 Member, Nuclear Electronics Manufacturers Association (NEMA) Nuclear Probe Quality Control Task Force
- 2000-Present Member of the Biomedical Optical Society International Technical Group
- 2000-2001 Member, Neuroimaging Director Search Committee
Department of Radiology, West Virginia University, Morgantown, WV
- 2000 Chairman, Magnetic Resonance Imaging Physicist Search Committee
Department of Radiology, West Virginia University, Morgantown, WV
- 1999 Moderator, Instrumentation and Data Analysis Session: Oncology Society of Nuclear Medicine Meeting Annual Meeting, Los Angeles, CA
- 1999 Member, Sensory Neuroimaging Scientist Search Committee
Department of Radiology, West Virginia University, Morgantown, WV
- 1999 Member, Mission Based Management Research Evaluation Committee
West Virginia University, Morgantown, WV
- 1998 Chairman and organizer, "Special Interdisciplinary Workshop on Intraoperative Probes" Annual Institute of Electrical and Electronics Engineers Medical Imaging Conference, November 11, 1998, Toronto, Canada
- 1998 Member, Bioengineering Advisory Committee
Department of Engineering, West Virginia University, Morgantown, WV
- 1997-1999 Organizer, Department Research Seminar Series
Department of Radiology, West Virginia University, Morgantown, WV
- 1985-1986 Supervisor of Teaching Assistants
Department of Physics, University of Michigan, Ann Arbor, MI

GRANT AWARDS

- 2003 National Institutes of Health (NCI):
"A Positron Emission Mammography/Tomography Biopsy Device" (R01 CA94196)
\$1.5M (Direct Costs) (9/1/03-8/31/07) (PI: R. Raylman).
- 2002 National Institutes of Health (NIBIB):
"A Beta-Sensitive Probe System for Use in Endoscopy" (R21 EB002140)
\$250,000 (Direct Costs) (5/1/02-4/30/05) (PI: R. Raylman).
- 1999 National Institutes of Health:
"Positron Emission Mammography-Guided Breast Biopsy" (R21 CA82752)
\$160,384 (Direct Costs) (7/1/99-6/30/02) (PI: R. Raylman).

- 1998 Whitaker Foundation Biomedical Research Grant:
"A Virtually Wireless Intraoperative Beta Probe for Breast Cancer Surgeries"
\$165,803 (Direct Costs) (5/1/98-4/30/01) (PI: R. Raylman).
- 1998 West Virginia University Research Foundation Pilot Grant Program:
"A Positron Emission Mammography Biopsy Apparatus (PEMBA)"
\$30,000 (PI: R. Raylman).
- 1997 West Virginia University Research Development Grant Program:
"Capabilities of FDG-PET for Detecting Small Tumors in the Chest"
\$8,000 (PI: R. Raylman).
- 1997 West Virginia University Central Funding Pilot Project Grant Program:
"Positron Emission Tomographic Imaging for early Detection of Pulmonary
Fibrosis and Pneumoconiosis"
\$30,000 (PI: N.C. Gupta).
- 1996 Society of Nuclear Medicine Education and Research Foundation:
"¹⁸Fuoro-Deoxyglucose-Guided Breast Cancer Surgery: An In Vitro Pilot Study"
\$5,000 (PI: R. Raylman).

PATENTS

- 1998 Solid State Beta-Sensitive Surgical Probe (USPTO No. 5,744,805)
1999 Solid State Beta-Sensitive Surgical Probe (CIP, USPTO No. 5,932,879)
1999 Method and Apparatus for Radiopharmaceutical-Guided Biopsy (USPTO No. 5,961,457)
2000 Solid State Beta-Sensitive Surgical Probe (CIP, USPTO No. 6,076,009)
2001 Radiation-Sensitive Surgical Probe with Interchangeable Tips (USPTO No. 6,236,880)
2002 Solid State Beta-Sensitive Surgical Probe (CIP, USPTO No. 6,456,869)

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Society of Nuclear Medicine
Institute of Electrical and Electronics Engineers
American Association of Physicists in Medicine
SPIE

GRANT REVIEWER

- 1999 United States Department of Energy: Small Business Innovative Research
(SBIR) Program
- 2004 United States Department of Defense Ovarian Cancer Research Program
- 2002-2003 United States Department of Defense Prostate Cancer Research Program
- 1999-2004 United States Department of Defense Breast Care Research Program

- 2003-2005 National Institutes of Health, SBIR Research Program Study Section
(ZRG1 SBMI-F (10))
- 2004 National Institutes of Health, NIBIB Site Visit Committee for Center for Gamma Ray
Imaging- University of Arizona (March 2004)
- 2005-2006 Chair National Institutes of Health, SBIR Research Program
Study Section (ZRG1 SBMI-F (10))
- 2006-Present California Breast Cancer Research Program (CBRCP)

JOURNAL REVIEWER

Associate Editor- *Institute of Electrical and Electronics Engineers (IEEE)*
Transactions on Nuclear Science
Guest Associate- Editor *Medical Physics*
Physics in Medicine and Biology
Magnetic Resonance in Medicine
Institute of Electrical and Electronics Engineers (IEEE) Nuclear Science Symposium
Institute of Electrical and Electronics Engineers (IEEE) Sensors Journal
Institute of Electrical and Electronics Engineers (IEEE) Transactions on Medical Imaging
American Journal of Physiology- Renal Physiology
Journal of Nuclear Medicine
Cancer Research

TEACHING ACTIVITIES

- 2000-Present *Medical Physics (PHYS 293)*
Department of Physics, West Virginia University, Morgantown , WV
- 1998-2002 *Nuclear Medicine Physics*
West Virginia University Hospitals Nuclear Medicine Technology Training Program,
West Virginia University, Morgantown, WV
- 1999-2003 *Introduction to Nuclear and Atomic Physics*
West Virginia University Hospitals Nuclear Medicine Technology Training Program,
West Virginia University, Morgantown, WV
- 1983-86 Graduate Student Teaching Assistant
Department of Physics, University of Michigan, Ann Arbor, MI

GRADUATE STUDENT THESES COMMITTEES

- 2007 Member, Doctoral Committee for Ioana Biliou Department of Physics,

West Virginia University, Morgantown, WV.

- 2005 Member, Doctoral Committee for Christopher Gregory "Electrical Property Enhanced Tomography (EPET)" Department of Computer Science and Electrical Engineering, West Virginia University, Morgantown, WV.
- 2005 Member, Masters Degree Committee for Senthil Ramamurthy "Localized Double-Quantum Filtered Correlated Spectroscopy on 3T MRI/MRS Scanner" Department of Computer Science and Electrical Engineering, West Virginia University, Morgantown, WV.
- 2005 Member, Masters Degree Committee for Srilatha Ainala "Development of Constant-Time Correlated Spectroscopy on a 3T Clinical MRI/MRS Scanner" Department of Computer Science and Electrical Engineering, West Virginia University, Morgantown, WV.
- 2004 Co-Chair, Masters Degree Committee for Amarnath Srinivasan "Computer Control System and Interface for Endoprobe- A Radionuclide Guided Endoscope System" Department of Computer Science and Electrical Engineering, West Virginia University, Morgantown, WV.

BIBLIOGRAPHY

Peer Reviewed Publications:

1. A.D. Krisch, D.G. Crabb, R.R. Raylman, et al, Energy Dependence of Spin Effects $p + p \rightarrow p + p$, Physical Review Letters, 1986;57:507-521.
2. R.D. Hichwa, E.A. Hugel, J.M. Moskwa, R.R. Raylman, Gas Targets for the Production of ^{15}O , ^{11}C , and ^{18}F , for PET Studies, Nuclear Instruments and Methods, 1987;B24/25.
3. F.Z. Khiari, A.D. Krisch, R.R. Raylman, et al., Acceleration of Polarized Protons to 22GeV/c and the Measurement of Spin-Spin Effects in $p + p \Rightarrow p + p$, Physics Review Letters D, 1989;39:45-81.
4. R.R. Raylman, G.D. Hutchins, A.H. Paradise, M. Schwaiger, Axial Sampling Requirements for 3-Dimensional Quantification of Myocardial Function with PET, IEEE Transactions on Nuclear Science, 1989;36:1030-1033.
5. G.D. Hutchins, R.A. Koeppe, W.L. Rogers, P. Chiao, R.R. Raylman, Constrained Least-Squares Filtering in High Resolution PET and SPECT Imaging, IEEE Transactions on Nuclear Science, 1990;37:647-651.

6. G.D. Hutchins, J.M. Caraher, R.R. Raylman, A Region of Interest Strategy for Minimizing Resolution Distortions in Quantitative Myocardial PET Studies, Journal of Nuclear Medicine, 1992;33:1243-1250.
7. R.R. Raylman, J.M. Caraher, G.D. Hutchins, Sampling Requirements for Dynamic Cardiac PET Studies Using Image-Derived Input Functions, Journal of Nuclear Medicine, 1993;34:440-447.
8. R.S.B. Beanlands, D.S. Bach, R.R. Raylman, W.F. Armstrong, V.W. Wilson, M. Monteith, C.K. Moore, E. Bates, and M. Schwaiger, The Acute Effects of Dobutamine on Myocardial Oxygen Consumption and Cardiac Efficiency Measured Using C-11 Acetate Kinetics in Patients with Dilated Cardiomyopathy, Journal of the American College of Cardiology, 1993;22:1389-1398.
9. R.R. Raylman, R.L. Wahl, Magnetically Enhanced Radionuclide Therapy, Journal of Nuclear Medicine, 1994;35:157-163.
10. R.R. Raylman, R.L. Wahl, A Fiber-optically Coupled Positron-Sensitive Surgical Probe, Journal of Nuclear Medicine, 1994;35:909-913.
11. R.R. Raylman, G.D. Hutchins, R.S.B. Beanlands, M. Schwaiger, Modeling of [C-11] Acetate Kinetics by Simultaneously Fitting Data from Multiple ROIs Coupled by Common Parameters, Journal of Nuclear Medicine, 1994;35:1286-1291.
12. R. R. Raylman, S.J. Fisher, R. S. Brown, S.P. Ethier, R.L. Wahl, Fluorine-18-Fluorodeoxyglucose-Guided Breast Cancer Surgery with a Positron-Sensitive Probe: Validation in Preclinical Studies, Journal of Nuclear Medicine, 1994;36:1869-1874.
13. R.R. Raylman, R.L. Wahl, Magnetically-Enhanced Protection of Bone Marrow from Beta Particles Emitted by Bone-Seeking Radionuclides: Theory of Application, Medical Physics, 1995;22:1285-1292.
14. R.R. Raylman, E.P. Ficaro, R.L. Wahl. Stereotactic Coordinates from ECT Sinograms for Radionuclide-Guided Breast Biopsy. Journal of Nuclear Medicine 1996;37:1562-1567.
15. R.R. Raylman, A.C. Clavo, R.L. Wahl. Exposure to Strong Magnetic Field Slows the Growth of Human Cancer Cells *In Vitro*. Bioelectromagnetics 1996;17.
16. R.R. Raylman, B.E. Hammer, N. L. Christensen. Combined MRI-PET Scanner: A Monte Carlo Evaluation of the Improvements in PET Resolution Due to the Effects of a Static Homogeneous Magnetic Field. IEEE Transactions on Nuclear Science, 1996;43:2406-2412.
17. R.R. Raylman, R. L. Wahl. Evaluation of Ion-Implanted-Silicon Detectors for Use in Intraoperative Positron Sensitive Probes. Medical Physics 1996;23:1889-1894.
18. R.R. Raylman, A.C. Clavo, S.C. Crawford, B. Recker, R.L. Wahl. Magnetically- Enhanced Radionuclide Therapy (MERiT): In Vitro Evaluation, International Journal of Radiation Oncology Biology Physics 1997;37:1201-1206.

19. R.R. Raylman, R.L. Wahl. Beta-Sensitive Intraoperative Probes Utilizing Dual, Stacked Ion-Implanted-Silicon Detectors: Proof of Principle, IEEE Transactions on Nuclear Science 1998;45:1730-1736.
20. R.R. Raylman, P.V. Kison, R.L. Wahl. Capabilities of Two and Three-Dimensional FDG-PET for Detecting Small Lesions and Lymph Nodes in the Upper Torso: A Dynamic Phantom Study. European Journal of Nuclear Medicine 1999;26(1):39-45.
21. R.R. Raylman, S. Majewski, R. Wojcik, A.G. Weisenberger, B. Kross, V. Popov, H.A. Bishop. The Potential Role of Positron Emission Mammography (PEM) in the Detection of Breast Cancer: A Phantom Study, Medical Physics 2000;27(8):1943-1954.
22. R.R. Raylman. A Solid-State Intraoperative Beta Probe System, IEEE Transactions on Nuclear Science, 2000;47:1696-1703.
23. R.R. Raylman. Performance of a Dual, Solid-State Intraoperative Probe System with Fluorine-18, Technetium-99m and Indium-111. Journal of Nuclear Medicine 2001;42:352-360.
24. R. R. Raylman, S. Majewski, A.G. Weisenberger, V. Popov, R. Wojcik, B. Kross, J.S. Schreiman, H. A. Bishop. Positron Emission Mammography-Guided Breast Biopsy, Journal of Nuclear Medicine, 2001;42:960-966.
25. R.R. Raylman, S. Majewski, R. Wojcik, A.G. Weisenberger, B. Kross, V. Popov. Corrections for the Effects of Accidental Coincidences, Compton Scatter and Object Size In Positron Emission Mammography (PEM) Imaging. IEEE Transactions on Nuclear Science, 2001;48:913-923.
26. R.J. Lederman, R.R. Raylman, S.J. Fisher, P.V. Kison, H. San, E.G. Nabel, R.L. Wahl. Detection of Atherosclerosis Using a Novel Positron-Sensitive Probe and 18-Fluorodeoxyglucose (FDG), Nuclear Medicine Communications, 2001;22:747-753.
27. R.R. Raylman, S. Majewski, M.F. Smith, R. Wojcik, A.G. Weisenberger, B. Kross, V. Popov, J.J. Derakhshan, Comparison of Scintillators for Positron Emission Mammography (PEM) Systems, IEEE Transactions on Nuclear Science, 2003;50:42-49.
28. M.F. Smith, S. Majewski, A.G. Weisenberger, D.A. Kieper, R.R. Raylman, T.G. Turkington, Analysis of Factors Affecting Positron Emission Mammography (PEM) Image Formation, IEEE Transactions on Nuclear Science, 2003;50:53-59.
29. R.R. Raylman, A. Hyder, A Dual Surface Barrier Detector Unit for Beta-Sensitive Endoscopic Probes, IEEE Transactions on Nuclear Science, 2004;51:117-122.
30. M.F. Smith, R.R. Raylman, S. Majewski, Positron Emission Mammotomography with Tomographic Acquisition using Dual Planar Detectors: Initial Evaluations, Physics in Medicine and Biology, 2004;49(11):2437-2452.
31. R.R. Raylman, A. Srinivasan, Endoprobe: A system for radionuclide-guided endoscopy, Medical Physics, 2004;31(12): 3306-3313.

32. R.R. Raylman, M.F. Smith, P. R. Menge, A Monte-Carlo Simulation Study of Detector Array Design for Breast metabolic Imaging Systems, Nuclear Instruments and Methods in Physics Research, Section A, 2005;555:403-410.
33. R.R. Raylman, S. Majewski, S.K. Lemieux, S.S. Velan, B. Kross, V. Popov, M.F. Smith, A.G. Weisenberger, C. Zorn, G.D. Marano, Simultaneous MRI and PET Imaging of a Rat Brain, Physics in Medicine and Biology, 2006;51:6371-6379.
34. R.R. Raylman, S. Majewski, B. Kross, V. Popov, J. Proffitt, M.F. Smith, A.G. Weisenberger, R. Wojcik, Development of a Dedicated Positron Emission Tomography System for the Detection and Biopsy of Breast Cancer, Nuclear Instruments and Methods in Physics Research, Section A, 2006;564(2):291-295.
35. R.R. Raylman, S. Majewski, B. Kross, S. K. Lemieux, S.S. Velan, V. Popov, J. Proffitt, M.F. Smith, A.G. Weisenberger, R. Wojcik, Initial Testing of a Prototype MRI-Compatible PET Imager, Nuclear Instruments and Methods in Physics Research, Section A, 2006;569(2):306-309.
36. S.S. Velan, C. Durst, S.K. Lemieux, R.R. Raylman, R. Sridhar, R.G. Spencer, G.R. Hobbs, M.A. Thomas, Investigation of Muscle Lipid Metabolism by Localized One- and Two-Dimensional MRS Techniques using a Clinical 3T MRI / MRS Scanner, Journal of Magnetic Resonance, 2007;25:192-199.
37. R.R. Raylman, S. Majewski, M.R. Mayhugh, Light Sharing in Multi-Flat-Panel-PMT PEM Detectors, Physica Medica, 2007;XXI (suppl. 1):83-86.
38. R.R. Raylman, M.F. Smith, A Task-based Evaluation of PEM Detector Element Size, Physica Medica, 2007;XXI (suppl. 1):80-82.
39. R.R. Raylman, S. Majewski, S.S. Velan, S.K. Lemieux, B. Kross, V. Popov, M.F. Smith, A.G. Weisenberger, Simultaneous acquisition of magnetic resonance spectroscopy (MRS) data and positron emission tomography (PET) images with a prototype MR-compatible, small animal PET imager, Journal of Magnetic Resonance, 2007;186(2):305-310.
40. S.S. Velan, S.K. Lemieux, R.R. Raylman, W. Boling, G.R. Hobbs, R. Sridhar, P. Kuppusamy, M. A. Thomas, Detection of cerebral metabolites by single voxel based PRESS and COSY techniques at 3T, Journal of Magnetic Resonance Imaging, 2007;26:405-409.
41. S.S. Velan, S. Ramamurthy, S. Ainala, C. Durst, S.K. Lemieux, R.R. Raylman, R.G. Spencer, M.A. Thomas, Implementation and validation of localized constant-time correlated spectroscopy (LCT-COSY) on a clinical 3T MRI scanner for investigation of muscle metabolism, Journal Magnetic Resonance Imaging, 2007;26:410-417.
42. S.S. Velan, K. Pichumani, D. Murray, R.R. Raylman, T. Scott, A. Manivannan, L. Halliburton, Magnetic Resonance Spectroscopy with Longitudinal Multispin Orders, Current Analytical Chemistry, 2008;4:40-54.

43. R.R. Raylman, S. Majewski, M.F. Smith, J Proffitt, W. Hammond, A. Srinivasan, J. KcKisson, V. Popov, A. Weisenberger, C.O. Judy, B. Kross, S. Ramasubramanian, L.E. Banta, P.E. Kinahan, K. Champley, The positron emission mammography/tomography breast imaging and biopsy system (PEM/PET): design, construction and phantom-based measurements, Physics in Medicine and Biology, 2008;53:637-653.
44. M.A. Thomas, S. Lipnick, S. Sendhil Velan, S. Liu, S. Banakar, N. Binesh, S. Ramadan, A. Ambrosio, R.R. Raylman, J. Sayre, N. DeBruhl, L. Bassett. Investigation of breast cancer using two-dimensional Magnetic Resonance Spectroscopy, NMR in Biomedicine, 2008 (in press).
45. M.A. Thomas, T. Lange, S. Sendhil Velan, R. Nagarajan, S. Raman, A. Gomez, D. Margolis, S. Swart, R.R. Raylman, R. Schulte, P. Boesiger, Two-Dimensional MR Spectroscopy of Human Prostates: Healthy and Prostate Cancer, Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA), 2008 (in press).

Conference Proceedings

1. R.R. Raylman, G.D. Hutchins, Use of Plastic Scintillator with Large Area Avalanche Photodiodes, IEEE Nuclear Science Symposium Conference Record, 1990;1:174-177.
2. R.R. Raylman, S. Majewski, A.G. Weisenberger, B. Kross, V. Popov, J.S. Schreiman, H.A. Bishop, An apparatus for positron emission mammography guided biopsy, IEEE Nuclear Science Symposium. Conference Record, 1999;3(2):1323-1327.
3. R.R. Raylman, S. Majewski, A.G. Weisenberger, B. Kross, V. Popov, J.S. Schreiman, H.A. Bishop, An apparatus for positron emission mammography-guided breast biopsy, Proceedings of the 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2000; 2(2):1470-1474.
4. R.R. Raylman, A solid-state intraoperative probe system, Proceedings of the 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2000;1(1):344-350.
5. R.R. Raylman, J.J. Derakshan, In-vivo detection of tumor-infiltrated axillary lymph nodes with a handheld beta-sensitive probe: a phantom study, Proceedings of the SPIE - The International Society for Optical Engineering, 2001;4244:474-483.
6. M.F. Smith, S. Majewski, A.G. Weisenberger, R.R. Raylman, T.G. Turkington, Analysis of factors affecting positron emission mammography (PEM) image formation, IEEE Nuclear Science Symposium Conference Record, 2002;4(4):2253-2257.
7. R.R. Raylman, M.F. Smith, Positron emission mammography with multiple angle acquisition, IEEE Nuclear Science Symposium Conference Record, 2003, 3(3):1892-1896.

Book Chapters:

1. L.G. Ratner, R.R. Raylman, "Summary of the Working Group on the Construction and Demonstration of a Siberian Snake," in: *Polarized Beams at the SSC*, (Eds. A.D. Krisch, L.M.T. Lin, O. Chamberlain). AIP Conference Proceedings No. 145, New York, 1985, pp. 98-103.

Invited Presentations:

1. R.R. Raylman, "Positron Emission Mammography Guided Biopsy," *First Workshop on the Nuclear Radiology of Breast Cancer*, November 17, 2002, Norfolk, VA.
2. R.R. Raylman, "Combining MRI and PET Imaging: Potential Benefits and Existing Challenges," *Design of Medical Devices Conference*, April 9, 2004, Minneapolis, MN.
3. R.R. Raylman, "Development of a Dedicated Positron Emission Tomography System for the Detection and Biopsy of Breast Cancer," *Imaging Technology In Biomedical Science*, September 28, 2005, Milos, Greece.
4. R.R. Raylman, "Development of a Positron Emission Mammography/Tomography System for Imaging of the Breast," University of Washington, Department of Radiology, Seattle, Washington, January 11, 2008.
5. R.R. Raylman, "Development of an MRI-Compatible Small Animal PET Imager," University of Washington, Department of Radiology, Seattle, Washington, January 11, 2008.
6. R.R. Raylman, "A Molecular Imaging Tool for Translational Breast Cancer Research," *Translational Research Cancer Center Consortium Meeting*, West Virginia University, Morgantown, WV, February 22, 2008.

Abstracts:

1. R.R. Raylman, G.D. Hutchins, M. Schwaiger, A.H. Paradise, The Effect of Axial Sampling and Motion on the Three-Dimensional Quantification of Myocardial Defects with Positron Emission Tomography, Journal of Nuclear Medicine, 1989;30:.
2. R.R. Raylman, J.M. Caraher, G.D. Hutchins, The Effect of Temporal Sampling on the Estimation of Kinetic Model Parameters Derived From Dynamic PET Studies of the Heart, Journal of Nuclear Medicine, 1992;33:881.
3. R.S.B. Beanlands, R.R. Raylman, D. Bach, W.F. Armstrong, E. Bates, M. Schwaiger, Effects of Drug Therapy for Heart Failure on Oxygen Consumption and Cardiac Efficiency Determined Using C-11 Acetate PET, Journal of Nuclear Medicine, 1993;34:107P.
4. R.R. Raylman, G.D. Hutchins, R.S.B. Beanlands, M. Schwaiger, Modeling of Myocardial ¹¹C-Acetate Kinetics by Simultaneously Fitting Data From Multiple ROIs, Journal of Nuclear Medicine, 1993;34:50P.

5. R.R. Raylman, R.L. Wahl, Treatment of Small Tumors with Magnetically Enhanced Radionuclide Therapy (MERIT): Theoretical Considerations, Journal of Nuclear Medicine, 1993;34:106P.
6. R.R. Raylman, A.C. Clavo, S.M. Crawford, R.L. Wahl, Experimental Validation of Magnetically Enhanced Radionuclide Therapy (MERIT), Journal of Nuclear Medicine, 1993;34:93P.
7. R.R. Raylman, R.L. Wahl, A Small Fiber-Optically Coupled Plastic Scintillator Positron Probe, Journal of Nuclear Medicine, 1993;34:113P.
8. R.R. Raylman, Schwaiger M. Calculation of Ejection Fraction Using Gated Positron Emission Tomography, Journal of Nuclear Medicine, 1994;35:104P.
9. R.R. Raylman, R.L. Wahl. Magnetically-Enhanced Reduction of Radiation Dose to Bone Marrow from Bone-Avid Radiopharmaceuticals, Journal of Nuclear Medicine, 1995;36:86P.
10. R.R. Raylman, E.P. Ficaro, R.L. Wahl. Calculation of Spatial Coordinates in Three Dimensions from Emission Computed Tomography Sinograms, Journal of Nuclear Medicine, 1995;36:179P.
11. T. Miyauchi, R.R. Raylman, P.V. Kison, A Paberzs, P.D. Shreve, R.L. Wahl. Can Respiratory Gated FDG-PET Improve Image Quality in Thoracic and Upper Abdominal Tumor Imaging? Journal of Nuclear Medicine, 1996;37:36P.
12. R.R. Raylman, R.L. Wahl. An Ion-Implanted-Silicon Detector Based Probe for the Intraoperative Detection of Beta-Emitters. Journal of Nuclear Medicine, 1996;37:52P.
13. R.R. Raylman, P.V. Kison, E.P. Ficaro, R.L. Wahl. Phantom Studies of Size Limitations in Detection of Tumor-Involved Lymph Nodes with 2- and 3-D PET. Journal of Nuclear Medicine, 1996;37:98P.
14. N.C. Gupta, G.M. Graeber, H.A. Bishop, R.R. Raylman. Improved Pre-Operative Staging of Primary Lung Cancer by PET-FDG Imaging. Journal of Nuclear Medicine 1997;38:243P.
15. N.C. Gupta, R.R. Raylman, G.M. Graeber, H.A. Bishop. Rapid 3D Acquisition of Whole Body PET-FDG Images for Cancer Detection: Pros and Pits. Journal of Nuclear Medicine, 1997;38:197P.
16. R.R. Raylman, P. Kison, R.L. Wahl. Target-to-Background Ratio Thresholds for Detection of Tumor-Infiltrated Lymph Nodes with 2- and 3-D PET: A Dynamic Phantom Study. Journal of Nuclear Medicine 1997;38:77P.
17. B.E. Hammer, N.L. Christensen, R.R. Raylman. MR-PET: Submillimeter MR and PET images in the same scanner. International Society of Magnetic Resonance in Medicine, April 1998.
18. R. R. Raylman, R. L. Wahl. A Dual, Stacked Solid State Intraoperative Beta Probe: Initial Evaluation. Journal of Nuclear Medicine, 1998;38:22P.

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