

**KIMBERLEE J. KEARFOTT**  
**Professor**  
**Department of Nuclear Engineering and Radiological Sciences**  
**The University of Michigan**  
**Ann Arbor, MI 48109-2104**

**Educational Background**

<u>Degree</u>	<u>Year</u>	<u>University</u>	<u>Field</u>
Sc. D.	1980	Massachusetts Institute of Technology	Nuclear Engineering
Doctoral Minor	1980	Harvard School of Public Health	Physiology/Medical Physics
M. E. N. E.	1977	University of Virginia	Nuclear Engineering
B. Sc.	1975	St. Mary's University (Nova Scotia)	Engineering
Dip. Engr.	1975	St. Mary's University (Nova Scotia)	Engineering

**Employment History**

<u>Title</u>	<u>Organization</u>	
Professor	The University of Michigan Nuclear Engineering and Radiological Sciences	1993 - Present (Tenured 1993)
Professor	Biomedical Engineering	1994 - Present
Professor	Radiology	2003 - Present
Radiological Engineer	Detroit Edison Fermi I and Fermi II Nuclear Power Facilities (through Bartlett Nuclear Services, Inc.)	2000-2001
Faculty Associate	Los Alamos National Lab, Environmental and Health Sciences Division (ESH-4), Inorganic Chemistry (C-SIC)	Summer 2001, 2002
Program Advisor	Radiological Health Engineering	1994 - 2000
Faculty Associate	Institute for the Humanities	1997 - 1998
Director of Faculty Development	College of Engineering	1994 - 1997 (3 year term)
Associate Professor	Georgia Institute of Technology Nuclear Engineering and Health Physics Programs	1989 - 1993 (Tenured 1991)
Associate Professor	Mechanical Engineering Emory University School of Medicine	1990 - 1993
Associate Professor	Radiology Arizona State University	1987 - 1989
Assistant Professor	Electrical and Computer Engineering Arizona State University	(Tenured 1987) 1984 - 1987
Research Associate	Electrical and Computer Engineering Sloan-Kettering Institute for Cancer Research	1980 - 1984
Assistant Professor	Neurology Cornell University Medical School	1980 - 1984
Adjunct Assistant Professor	Physics in Neurology Massachusetts College of Pharmacy	1980
Research Assistant	Physics and Mathematics Massachusetts General Hospital	1980
Research Assistant	Physics Research Laboratory Massachusetts Institute of Technology	1977 - 1980
Co-op Engineer	Nuclear Engineering Department Babcock and Wilcox Co.	1975 - 1977
	Nuclear Power Generation Division, Technical Staff	

**Major Fields of Interest and Expertise:** personnel dosimetry (thermoluminescent detectors, optically stimulated luminescent detectors, novel approaches); environmental radionuclide modeling and measurement (radon, RESRAD and similar codes, *in situ*)

spectroscopy, tomography); radioactive waste transportation, management, disposal, decommissioning and decontamination; physiological models (PET, SPECT, ICRP, general); internal dose assessment (ICRP/NCRP, MIRD, general); radiation detection and external dosimetry; applied radiation protection (medical health physics, nuclear power plant health physics)

**Additional Fields of Interest and Experience:** positron emission tomography, single photon emission computed tomography, tomographic image reconstruction, digital image formation and processing, mammography, medical imaging quality control and assurance, augmented and virtual reality, new detector material development, history of women in engineering and physics

## I. PUBLICATIONS

### A. Dissertation

“Measurement of Glucose Metabolism Using Positron Imaging and F-18-Labeled Analogs”, Sc. D. Dissertation, July 1980, Advisor: G. Brownell, M. I. T.

### B. Published Books and Parts of Books (Student/Postdoc Authors in Italics)

1. Goodman, M. M., Kearfott, K. J., Elmaleh, D. R., Alpert, N. M., Brownell, G. L., “A Comparison of Carbon-11 and Fluorine-18 Carbohydrates”, in Radiopharmaceuticals: Structure-Activity Relationships, pages 801-833, (R. P. Spencer, Ed.), New York: Grune and Stratton, 1981.

2. Rottenberg, D. A., Ginos, J. Z., Kearfott, K. J., “Assessment of Regional Cerebral Acid-Base Status in Man Using C-11-Dimethylxazolidinedione and Positron Emission Tomography”, in The Metabolism of the Human Brain Studied with Positron Emission Tomography, pages 279-284, (T. Greitz, L. Widen, Eds.), New York: Raven Press, 1985.

3. Trueblood, J. M., *Burch, S. E.*, Kearfott, K. J., *Brooks, K. W.*, “Radiographic Film Digitization”, in Digital Imaging, Medical Physics Monograph No. 22, pages 97-122, (W. R. Hendee, J. M. Trueblood, Eds.), Madison: Medical Physics Publishing Company, 1993.

4. Kearfott, K. J., Votaw, J. R., “The Basics of Positron Emission Tomographic Imaging”, in Chemists' Views of Imaging Centers, pages 3-26, (A.M. Emran, Ed.), New York: Plenum Press, 1995.

5. Kearfott, K. J., Stabin, M., Eds., History of the Medical Uses of Radiation, special issue of Health Physics, vol. 69, no. 5, 1995.

6. Kearfott, K. J., “Issues in External Dosimetry for Medical Personnel”, in External Dosimetry, pages 287-316, (Jack Higginbotham, Ed.), Madison: Medical Physics Publishing Company, 1996.

7. *Calkins, L. M.*, Kearfott, K. J., “Radioactive Waste Management in the Early Nuclear Era: A Survey of Practices and Policy Transitions at U. S. Nuclear Sites 1946-54”, International Symposium on Waste Management Technologies in Ceramic and Nuclear Industry, Session on Historical Aspects of Radioactive Waste Management, in Environmental Issues and Waste Management Technologies in the Ceramic and Nuclear Industries III, pages 169-176, (D. K. Peeler, J. C. Maria, Eds.), Ceramic Transactions, vol. 87, 1998.

8. Kearfott, K. J., *Calkins, L. M.*, “Atomic Energy Commission Educational Programs 1947-52”, International Symposium on Waste Management Technologies in Ceramic and Nuclear Industry, Session on Historical Aspects of Radioactive Waste Management, in Environmental Issues and

Waste Management Technologies in the Ceramic and Nuclear Industries III, pages 159-168, (D. K. Peeler, J. C. Maria, Eds.), Ceramic Transactions, vol. 87, 1998.

9. Duscha, L. A., Burns, C. J., Colton, R. J., Kearfott, K. J., Samelson, R. J., Steffan, R. J., Tschinkel, V. J., Uhle, M. E., Zylstra, G. J., Research Opportunities for Managing the Department of Energy's Transuranic and Mixed Wastes, National Research Council, The National Academies Press, Washington, D.C., 2002 (November), 118 pp.

**C. Published Journal Papers (refereed)** (Student/Postdoc Authors in Italics)

1. Brownell, G. L., Ackerman, R. H., Strauss, H. W., Elmaleh, D. R., Cochavi, S., Alpert, N., Correia, J. A., Kearfott, K. J., Taveras, J., "Preliminary Imaging Results with F-18-2-Fluoro-2-deoxy-D-Glucose", J Comp Assist Tomogr, vol. 4, no. 4, pp. 473-477, 1980.

2. Goodman, M. M., Elmaleh, D. R., Kearfott, K. J., Ackerman, R. H., Hoop, B., Brownell, G. L., Alpert, N. M., Strauss, H. W., "F-18-Labeled 3-deoxy-3-Fluoro-D-Glucose for the Study of Regional Metabolism in the Brain and Heart", J Nucl Med, vol. 22, no. 2, pp. 138-144, 1981.

3. Rottenberg, D. A., Lu, H. C., Kearfott, K. J., "The *In Vivo* Autoradiographic Measurement of Regional Cerebral Blood Flow Using Stable Xenon and Computerized Tomography: The Effect of Tissue Heterogeneity and Computerized Tomography Noise", J Cereb Blood Flow Metab, vol. 2, no. 2, pp. 173-178, 1982.

4. Kearfott, K. J., "Absorbed Dose Estimates for Positron Emission Tomography (PET): CO-15, C-11-O, and CO-15-O", J Nucl Med, vol. 23, no. 11, pp. 1031-1037, 1982.

5. Kearfott, K. J., "Radiation Absorbed Dose Estimates for Positron Emission Tomography (PET): K-38, Rb-81, Rb-82, and Cs-130", J Nucl Med, vol. 23, no. 12, pp. 1128-1132, 1982.

6. Kearfott, K. J., "Radiation Absorbed Dose Estimates for Positron Emission Tomography (PET): Inert Gases Ne-19 and Kr-77", Health Physics, vol. 44, no. 3, pp. 235-241, 1983.

7. Kearfott, K. J., Rottenberg, D. A., Deck, M. D. F., "Optimization of Xenon-Enhanced CT Studies: Beam Energy, Enhancement, Root Mean Square Deviation, and Repeatability", Am J Neuroradiol, vol. 4, no. 2, pp. 195-199, 1983.

8. Kearfott, K. J., Rottenberg, D. A., Volpe, B. T., "Design of Steady-State Positron Emission Tomography Protocols for Neurobehavioral Studies: CO-15-O and Ne-19", J Comput Asst Tomogr, vol. 7, no. 1, pp. 51-58, 1983.

9. Kearfott, K. J., Junck, L., Rottenberg, D. A., "C-11 Dimethylloxalidinedione (DMO): Biodistribution, Radiation Absorbed Dose, and Potential for PET Measurement of Regional Brain pH", J Nucl Med, vol. 24, no. 9, pp. 805-811, 1983.

10. Brownell, G. L., Kearfott, K. J., Kairento, A. L., Elmaleh, D. R., Alpert, N. M., Correia, J. A., Wechsler, L., Ackerman, R. H., "Quantitation of Regional Cerebral Glucose Metabolism", J Comput Assist Tomogr, vol. 7, no. 5, pp. 919-924, 1983.

11. Kearfott, K. J., Carroll, L. R., "Evaluation of the Performance Characteristics of the PC 4600 Positron Emission Tomograph", J Comput Assist Tomogr, vol. 8, no. 3, pp. 503-513, 1984.

12. Kearfott, K. J., Elmaleh, D. R., Goodman, M., Correia, J. A., Alpert, N. M., Ackerman, R. H., Brownell, G. L., Strauss, W. H., "Comparison of 2- and 3-F-18-Fluoro-Deoxy-D-Glucose for Studies of Tissue Metabolism", Int J Nucl Med Biol, vol. 11, no. 1, pp. 15-22, 1984.

13. Kearfott, K. J., Lu, H. C., Rottenberg, D. A., Deck, M. D. F., "The Effects of CT Drift on

Xenon/CT Measurement of Regional Cerebral Blood Flow”, Med Phys, vol. 11, no. 5, pp. 686-689, 1984.

14. Kearfott, K. J., Rottenberg, D. A., Knowles, R. J. R., “A New Headholder for PET, CT, and NMR Imaging”, J Comput Assist Tomogr, vol. 8, no. 6, pp. 1217-1220, 1984.

15. Kearfott, K. J., “(A Statistical Model for Positron Emission Tomography) Comment: Practical Considerations”, J Am Statistical Assn, vol. 80, no. 389, pp. 26-28, 1985.

16. Rottenberg, D. A., Ginos, J. Z., Kearfott, K. J., Junck, L., Dhawan, V., Jarden, J. O., “In vivo Measurement of Brain Tumor pH Using C-11-DMO and Positron Emission Tomography”, Ann Neurol, vol. 17, no. 1, pp. 70-79, 1985.

17. *Gruppen, M. E.*, Kearfott, K. J., “Numerical Analysis of Infrared Laser Heating in Thermoluminescent Material Layers”, J Appl Phys, vol. 64, no. 3, pp. 1044-1049, 1988.

18. Kearfott, K. J., “Preliminary Experiences with Rn-222 in Arizona Homes”, Health Physics, vol. 56, no. 2, pp. 169-179, 1989.

19. Kearfott, K. J., “Sinograms and Diagnostic Tools for the Quality Assurance of a Positron Emission Tomograph”, J Nucl Med Tech, vol. 17, no. 2, pp. 83-87, 1989.

20. Kearfott, K. J., *Murray, D.*, “An Inexpensive Miniaturized Linear CdTe Detector Array System”, Health Physics, vol. 57, no. 5, pp. 825-830, 1989.

21. Kearfott, K. J., “Long-Term Performance of a Multiplanar Positron Emission Tomograph”, J Nucl Med, vol. 30, no. 8, pp. 1378-1385, 1989.

22. Kearfott, K. J., Rucker, R. H., “Median Polish for Quality Assurance of a PET Scanner”, J Comput Assist Tomogr, vol. 13, no. 5, pp. 932-939, 1989.

23. Kearfott, K. J., “Performance of a Well Counter and a Dose Calibrator for Quantitative Positron Emission Tomography”, Health Physics, vol. 57, no. 4, pp. 623-629, 1989.

24. *Gruppen-Shemansky, M. E.*, Kearfott, K. J., Hirleman, E. D., “Numerical Analysis of Infrared Laser Heating in Thermoluminescent Material Layers: The Focused Laser Case”, J Appl Phys, vol. 66, no. 7, pp. 3407-3409, 1989.

25. Kearfott, K. J., *Kluksdahl, E. M.*, “Effects of Axial Spatial Resolution and Sampling on Object Detectability and Contrast for Multiplanar Positron Emission Tomography”, Med Phys, vol. 16, no. 5, pp. 785-790, 1989.

26. Kearfott, K. J., *Murty, K. N.*, “A High Spatial Resolution Computerized Electro-Optic Radiation Detector Array”, Health Physics, vol. 58, no. 1, pp. 99-105, 1990.

27. Kearfott, K. J., *Hill, S. E.*, “Simulated Annealing Image Reconstruction Method for a Pinhole Aperture Single Photon Emission Computed Tomograph (SPECT)”, IEEE Trans Med Imaging, vol. 9, no. 2, pp. 128-143, 1990.

28. Kearfott, K. J., “Feasibility of Simultaneous and Sequentially Administered Dual Tracer Protocols for Measurement of Regional Cerebral Hematocrit Using Positron Emission Tomography”, Phys Med Biol, vol. 35, no. 2, pp. 249-258, 1990.

29. *Bandy, D. J.*, Kearfott, K. J., “New Phantom Design for Mapping Spatial Resolution in SPECT Imaging”, J Nucl Med Tech, vol. 18, no. 1, pp. 34-37, 1990.

30. Kearfott, K. J., *Gruppen-Shemansky, M. E.*, “Positional Radiotherapy Beam Dosimetry Using a Laser Heated Thermoluminescent Plate”, Med Phys, vol. 17, no. 3, pp. 429-435, 1990.
31. Kearfott, K. J., *Gruppen-Shemansky, M. E.*, “Design of a Positionally Sensitive Laser-Heated Thermoluminescent Detector System”, Health Physics, vol. 59, no. 4, pp. 421-431, 1990.
32. Kearfott, K. J., *Nabelssi, B. K.*, Rucker, R. H., Klingler, G. W., “Evaluation of Two Thermoluminescent Detection Systems for Medical Imaging Environments”, Health Physics, vol. 59, no. 6, pp. 827-836, 1990.
33. Faulkner, D. B., Kearfott, K. J., Manning, R. G., “Planning of a Clinical PET Facility”, J Nucl Med Tech, vol. 19, no. 1, pp. 5-19, 1990.
34. Kearfott, K. J., “Dual-lumen Catheters: Quality Control Tests for Radiopacity”, Intl J Rad Appl Instru Part A: Appl Rad and Isot, vol. 42, no. 5, pp. 463-469, 1991.
35. Kearfott, K. J., *Chesser, J. M.*, *Mitchell, H. E.*, Coombs, M. A., “Apparent Dose Equivalents Resulting from Severe Heating of Film Dosimeters”, Health Physics, vol. 60, no. 4, pp. 597-601, 1991.
36. Kearfott, K. J., Carey, J. E., *Clemenshaw, M. N.*, Faulkner, D. B., “Radiation Protection Design for a Clinical Positron Emission Tomography (PET) Imaging Suite”, Health Physics, vol. 63, no. 5, pp. 581-589, 1992.
37. Kearfott, K. J., Metzger, R. L., Kraft, K. R., Holbert, K. E., “Underground Air Returns as Active Transportation Pathways for Radon Gas Entry into Homes”, Health Physics, vol. 63, no. 6, pp. 665-673, 1992.
38. Kearfott, K. J., Metzger, R. L., Kraft, K. R., Holbert, K. E., “Mitigation of Elevated Indoor Radon Gas Resulting From Underground Air Return Usage”, Health Physics, vol. 63, no. 6, pp. 674-680, 1992.
39. Kearfott, K. J., *Juang, R. J.*, Marzke, M. W., “Implementation of Digital Stereo Imaging for Analysis of Metaphyses and Joints in Skeletal Collections”, Medical and Biological Engineering and Computing, vol. 31, no. 2, pp. 149-156, 1993.
40. *Brooks, K. W.*, Trueblood, J. H., Kearfott, K. J., “Subjective Evaluations of Mammographic Accreditation Phantom Images by Three Observer Groups”, Investigative Radiology, vol. 29, no. 1, pp. 42-47, 1994.
41. *Windham, J. R.*, Kearfott, K. J., *Mis, F. J.*, “Discrepancies in Committed Effective Dose Equivalents Calculated Using United States Nuclear Regulatory Commission Regulatory Guide 8.34”, Health Physics, vol. 67, no. 5, pp. 486-494, 1994.
42. Kearfott, K. J., *Han, S.*, McMahan, K. L., *Samei, E.*, “Sensitivity of a Mixed Field Dosimetry Algorithm to Uncertainties in Thermoluminescent Element Readings”, Health Physics, vol. 68, no. 3, pp. 340-349, 1995.
43. *Samei, E.*, Kearfott, K. J., Wang, C-K. C., “Numerical Modeling of a New Method for Determination of Shallow Dose and Deep Dose in Low-LET Radiation Fields”, Radiation Protection Dosimetry, vol. 58, no. 2, pp. 103-114, 1995.
44. *Samei, E.*, Kearfott, K. J., Wang, C. -K., *Han, S.*, “Impact of Variations in Physical Parameters on Glow Curves for Planchet Heating of TL Dosimeters”, Nuclear Instrumentation and Methods Phys. Res. A, vol. 353, pp. 415-419, 1994.

45. *Samei, E., Kearfott, K. J.*, “A Limited Bibliography of Atomic Energy Commission-Funded Human Radiation Experiments”, Health Physics, vol. 69, no. 6, pp. 885-891, 1995.
46. *Kearfott, K. J., Zhu, M.*, “A Comparison of Values of Annual Limits on Intake Presented in ICRP 61 and 10 CFR Part 20 1991”, Health Physics, vol. 70, no. 4, pp. 552-555, 1996.
47. *Samei, E., Kearfott, K. J., Gillespie, T. J., Wang, C. -K.C.*, “An Atlas of Selected Beta Ray Spectra and Depth Dose Distributions in Lithium Fluoride and Soft Tissue Generated by a Fast Monte-Carlo-Based Sampling Method”, Radiation Physics and Chemistry, vol. 48, no. 6, pp. 719-725, 1996.
48. *Johnson, W. H., Kearfott, K. J.*, “Lost Life Expectancy Rate: An Application to Environmental Levels of Radiation”, Health Physics, vol. 73, no. 2, pp.312-319, 1997.
49. *Simpkins, R. W., Kearfott, K. J.*, “The Minimum Number of Observations Necessary to Develop an Average Thermoluminescent Dosimeter Element Correction Factor”, Radiation Protection Management, vol. 13, no. 6, pp. 55-61, 1997.
50. *Burch, S. E., Kearfott, K. J., Trueblood, J. H., Shiels, W. C., Yeo, J. I., Wang, C. K. C.*, “A New Approach to Film Dosimetry for High Energy Photon Beams: Lateral Scatter Filtering”, Medical Physics, vol. 24, no. 5, pp. 775-783, 1997.
51. *Brooks, K. W., Trueblood, J. H., Kearfott, K. J., Lawton, D.*, “Automated Analysis of the American College of Radiology Mammographic Accreditation Phantom Images”, Medical Physics, vol. 24, no. 5, pp. 709-723, 1997.
52. *Benke, R. R., Kearfott, K. J.*, “Comparison of In Situ and Laboratory Gamma Spectroscopy of Natural Radionuclides in Desert Soil”, Health Physics, vol. 73, no. 2, pp. 350-361, 1997. [cover article]
53. *Manuca, D., Kearfott, K. J.*, “Effects of Intake Function Shape on Estimations of Internal Dose”, Health Physics, vol. 75, no. 1, pp. 76-84, 1998.
54. *Wood, J. L., Benke, R. R., Rohrer, S. M., Kearfott, K. J.*, “A Comparison of Minimum Detectable and Proposed Maximum Allowable Soil Concentration Cleanup Levels for Selected Radionuclides”, Health Physics, vol. 76, no. 4, pp. 413-417, 1999.
55. *Branch, C. J., Kearfott, K. J.*, “Positional Glow Curve Simulation for Thermoluminescent Detector (TLD) System Design”, Nuclear Instrumentation and Methods Phys. Res. A, vol. 442, pp. 638-642, 1999.
56. *Hsu, H. H., Kearfott, K. J.*, “Criticality Dosimetry Using a Sulfur Disk and A Priori Neutron Spectral Knowledge”, Nuclear Instrumentation and Methods Phys. Res. A, vol. 442, pp. 626-628, 1999.
57. *Hsu, H. H., Kearfott, K. J.*, “Effects of Neutron Source Selection on Land-Mine Detection Efficiency”, Nuclear Instrumentation and Methods Phys. Res. A, vol. 442, pp. 914-918, 1999.
58. *Deogracias, E. C., Wood, J. L., Wagner, E. C., Kearfott, K. J.*, “Polynomial Expressions of Electron Depth Dose as a Function of Energy in Various Materials: Applications to Thermoluminescence (TL) Dosimetry”, Nuclear Instrumentation and Methods Phys. Res. A, vol. 442, pp. 629-637, 1999.
59. *Benke, R. R., Kearfott, K. J.*, “Soil Sample Moisture Content as a Function of Time During Oven Drying for Gamma Spectroscopic Measurements”, Nuclear Instrumentation and Methods Phys. Res. A, vol. 442, pp. 817-819, 1999.

60. Benke, R. R., Kearfott, K. J., “Accounting for  $^{222}\text{Rn}$  Loss During Oven Drying for the Immediate Laboratory Gamma-ray Spectroscopy of Collected Soil Samples”, Applied Radiation and Isotopes, vol. 52, no. 2, pp. 271-287, 2000.
61. Kearfott, K. J., Han, S., Wagner, E. C., Samei, E., Wang, C.-K. C., “Numerical Simulation of a TLD Pulsed Laser-Heating Scheme for Determination of Shallow Dose and Deep Dose in Low-LET Radiation Fields”, Applied Radiation and Isotopes, vol. 52, no. 6 (June), pp. 1419-1429, 2000.
62. Hamilton, D. S., Peck, M., Yu, H., Kearfott, K. J. “Computer-Based Radiation Safety Training For Hospital Radiation Workers”, Operational Radiation Safety, vol. 78, no. 1, pp. 54-58, 2000.
63. Benke, R. R., Kearfott, K. J., “Suggested Sample Processing Procedure for Immediate Gamma-Ray Spectroscopy Determinations of Ra-226 Activities in Soil Samples”, Radioactivity and Radiochemistry, vol. 10, no. 4, pp. 34-41, 1999.
64. Baciak, J. E., Kearfott, K. J., “Review of Fetal Radiation Dose Protection and Dosimetry Issues for Medical Procedures”, J Rad Prot Man, vol. 17, no. 1, pp. 39-42, 2000. Also printed in RSO Magazine, vol. 5., no. 2, pp. 13-16, 2000.
65. Shapiro, B., Rufini, V., Jarwan, A., Geatti, O., Kearfott, K.J., Fig, L. M., Kirkwood, I. D., Gross, M. D., “Artifacts, Anatomical and Physiological Variants, and Unrelated Diseases that Might Cause False-Positive Whole-Body  $^{131}\text{I}$  Scans in Patients with Thyroid Cancer”, Seminars in Nuclear Medicine, vol. XXX, no. 2 (April), pp. 115-132, 2000.
66. Donnell, J. A., Kearfott, K. J., “Teaching Radiation Safety Students to Write: A Classroom Strategy”, J Rad Prot Man, vol. 17, no. 2, pp. 23-29, 2000. Also printed in RSO Magazine, vol. 5, no. 3, pp. 15-22, 2000.
67. Kearfott, K. J., (Peacock-)Homiller, S. L., Dowling, M. M., “Effects of Containers and Supports on Sensitivity of Thermoluminescent Detectors for Environmental Monitoring”, J Rad Prot Man, vol. 17, no. 6, pp. 26-32, 2000.
68. Benke, R. R., Kearfott, K. J., “An Improved *In Situ* Method for Determining Depth Distributions of Gamma-Ray Emitting Radionuclides”, Nuclear Instruments and Methods in Phys. Res. A, vol. 463, no. 1-2, pp. 393-412, 2001.
69. Benke, R. R., Kearfott, K. J., “Demonstration of a Collimated *In Situ* Method for Determining Depth Distributions Using Gamma Ray Spectroscopy”, Nuclear Instruments and Methods in Phys. Res. A, vol. 482, no. 3, pp. 814-831, 2002.
70. Steinman, R. L., Kearfott, K. J., Weiner, R. F., “A Comparison of Transient Dose Model Predictions and Experimental Measurements”, Health Physics, vol. 83, no. 4, pp. 504-511, 2002.

**D. Published Papers, Reports, and News Items (non-refereed): 21**

**E. Book Reviews: 19**

**F. Editorials and Letters to the Editor: 13**

**II. CONFERENCE PUBLICATIONS, PRESENTATIONS, AND MEDIA APPEARANCES**

**A. Invited Conference and Keynote Addresses: 16**

- B. Conference Presentations with Proceedings: Abstracts (refereed): 117**
- C. Conference Presentations with Proceedings: Papers (refereed): 27**
- D. Conference Presentations with Proceedings (non-refereed): 28**
- E. Conference Presentations without Proceedings: 24**
- F. Seminar Presentations and Invited Talks (non-conference): 118**
- G. Radio and Television Appearances: 11**
- H. Newspaper, Magazine, and Internet Articles: 6**

### **III. TEACHING**

#### **A. University Courses Taught**

##### **Arizona State University**

Introduction to Nuclear Engineering (sophomore)  
 Digital Computer Fundamentals (sophomore)  
 Electrical Networks (junior)  
 Clinical Nuclear Engineering (senior)  
 Physics of Diagnostic Radiology (graduate)  
 Nuclear Medicine Instrumentation (graduate)  
 Medical Tomography (graduate)

##### **Georgia Institute of Technology**

Thermodynamics I (sophomore)  
 Nuclear Engineering Seminar (undergraduate/graduate)  
 Introduction to Radiation Protection (graduate)  
 Medical X-ray Imaging (graduate)  
 Internal Dosimetry (graduate)  
 Medical Usage of Radioisotopes (graduate)  
 Medical Terminology for Engineers (graduate)  
 Health Physics Practice (graduate)  
 Medical Physics Internship (graduate)  
 Practical Problems in Health Physics (graduate)

##### **The University of Michigan**

Introduction to Nuclear Engineering and Radiological Sciences (sophomore)  
 Fundamentals of Nuclear Engineering (sophomore)  
 Radiological Health Engineering Fundamentals (senior)  
 Medical Radiological Health Engineering (graduate)  
 Internal Radiation Dose Assessment (graduate)

#### **B. Continuing Education (Short) Courses Taught (selected)**

Problems in External Dosimetry and Shielding (5 days)  
 Internal Radiation Dose Assessment (5 days)  
 Health Physics Board Certification Examination Review. (5 days)  
 Intensive Review for the NRRPT Certification Examination (5 days)  
 Medical Physics Training Course for Radiology Residents (9 months)

## **C . Curriculum Development**

### *Arizona State University*

Responsible for bionuclear component of undergraduate and graduate biomedical engineering interdisciplinary program

### *Georgia Institute of Technology*

Leader of Health Physics and Medical Physics graduate programs, including video delivery and medical physics internships

### *University of Michigan*

Leader of Radiological Health Engineering undergraduate and graduate master's programs  
Leaded of new Radiation Safety, Environmental Science, and Medical Physics doctoral option

## **IV. INDIVIDUAL STUDENT GUIDANCE**

### **A . Postdoctoral Fellows Supervised**

1. E. B. Bartlett, September 1990-January 1991, Medical Imaging.
2. L. M. Calkins, September 1994-August 1996, National Science Foundation Fellow, Etiology of Radiation Protection Culture.

### **B . Ph.D. Students Supervised (as Chair)**

1. M. E. Grupen, 1989 (Arizona State University), "Three-dimensional Spatial and Dosimetric Characterization of Radiotherapy Beams Using Laser Readout of Thermoluminescent Detectors".
2. J. Ye, 1992 (G. I. T.), "Scatter and Attenuation Correction for SPECT Quantitative Imaging".
3. S. E. Burch, 1993 (G. I. T.), "Radiotherapy Film Densitometry using a Slow-Scan, Cooled Charge Coupled Device Imaging System".
4. K. W. Brooks, 1993 (G. I. T.), "Automated Analysis of Mammography Phantom Images".
5. S. Han, 1994 (G. I. T.), "Mixed Field Dosimetry Using Focused and Unfocused Laser Heating of Thermoluminescent Materials".
6. T. H. Fox, 1994 (G. I. T.), "Computer Treatment Planning System and Optimization of Dose Distributions for a Patient Rotator Used in Stereotactic Radiosurgery".
7. E. Samei, 1997 (U. M.), "The Performance of Digital X-ray Imaging Systems in Detection of Subtle Lung Nodules".
8. A. Badano, 1999 (U. M.). "Image Quality Degradation by Light Scattering Processes in High Performance Display Devices for Medical Imaging".
9. R. R. Benke, 2000 (U. M.). "An Improved Method for Determining Radionuclide Depth Distributions using *In Situ* Gamma-Ray Spectrometry".
10. R. L. Steinman, 2000 (U. M.). "Evaluation of the Risks Associated with the Routine Transport of Radioactive Material in Michigan".
11. E. C. Wagner, 2001 (U. M.). "A Double Element Method for Mixed Field Radiation Dosimetry".

12. S. Bernal, began advising Fall 2001 (U. M.). Tentative Topic "A Novel Method for Timed Dosimetry Using Thermoluminescent Detectors".

13. G. West, began advising Fall 2002 (U. M.). Tentative Topic "Equilibrium Dosimetry using Passive Integrating Detectors".

### **C. M.S. Thesis Students Supervised (as Chair)**

1. D. Murray, May 1988 (Arizona State University), "Cadmium Telluride Crystal Gamma-Detector Array for a Miniaturized Single Photon Emission Computed Tomograph".

2. K. N. Murty, July 1988 (Arizona State University), "Design, Construction and Evaluation of a Computerized Electro-optic Detector for Use in a Mini-SPECT".

3. S. E. Hill, October 1988 (Arizona State University), "Applicability of the Simulated Annealing Method for Tomographic Image Reconstruction".

4. E. K. Kluskdahl, December 1988 (Arizona State University), "Optimization of a Single Photon Emission Computed Tomography System with a Unique Detector Configuration".

5. B. K. Nabelssi, June 1989 (Arizona State University), "Thermoluminescent Radiation Dosimetry for Medical Diagnostic Imaging".

6. P. U. Lind, July 1989 (Arizona State University), "Analysis and Restoration of Severely Blurred Voyager Spacecraft Images".

7. S. P. Pisciotta, August 1989 (Arizona State University), "A Method for Three Component Fractional Analysis".

8. S. Y. Lin, August 1989 (Arizona State University), "Mammographic Digital Image Processing".

9. R. J. Juang, August 1989 (Arizona State University), "An Application of Binocular Stereo Surface Analysis to Bone Epiphysis Using a Low Cost Image Processing System".

10. J. P. Peng, November 1991 (G. I. T.), "Automated Acceptance Criteria for the American College of Radiology (ACR) Mammographic Accreditation Phantom Images".

11. L. L. Wilson, December 1991 (G. I. T.), "Using Magnetic Resonance Anatomically Simulated Normal Image to Reveal SPECT Finite Resolution Effects".

12. T. H. Fox, May 1992 (G. I. T.), "Evaluation of a Method for Identifying Finite Resolution Effects in Single Photon Emission Computed Tomographic (SPECT) Images".

13. W. H. Johnson, February 1992 (G. I. T.), "Lost Life Expectancy Rate Survey Meter".

14. M. L. B. Harmer, December 1992 (G. I. T.), "A Dynamic Model for Calculating the Uptake of an Inhaled Noble Gas".

15. J. S. Yakoubian, March 1993 (G. I. T.), "Mammographic Image Enhancement".

16. E. Samei, Summer 1993 (G. I. T.) "Theoretical Study of Various Thermoluminescent Dosimeters Heating Schemes".

17. T. J. Gillespie, Spring 1994 (G. I. T.), "A Computer Model of Beta Particle Dose Distributions in Lithium Fluoride and Tissue".

18. B. Busby, Summer 1997 (U. M.), "Error Analysis of a Novel Method for Mixed Beta/Gamma Field Dosimetry Using Pulsed Laser Heating of LiF Thermoluminescent Materials".

19. S. M. Shah, Fall 1998 (U. M.). "An Algorithm for the Quantitative Analysis of Mammographic Breast Density".

20. A. Akhtar, Fall 1999 (U. M.), "Double Badging of Nuclear Medicine Technologists for Improved Personnel Dose Assessment".

**D. M.S./M. Eng. Research Projects: 90**

**E. Undergraduate Research and Engineering Projects: 69**

**F. Member of Master's Thesis Committees (not as primary advisor): 4**

**G. Member of Doctoral Oral Committees (not as primary advisor): 10**

**H. Member of Doctoral Dissertation Committees (not as primary advisor): 12**

## **V. RESEARCH FUNDING AND EQUIPMENT ACQUISITIONS**

### **A. Funded External Grants and Contracts (selected)**

1. "SPECT for Cardiovascular Imaging"  
American Heart Association, Arizona Affiliate Grant-in-Aid  
Result: Funded \$37,555 (7/1/85 - 6/30/87)  
Principal Investigator

2. "A Novel Approach to Physiological Imaging"  
National Institutes of Health, Biomedical Research Technology Program  
Result: Funded \$34,306 (9/15/87 - 9/14/89)  
Principal Investigator

3. "Software and Techniques Analysis for PET"  
Scottsdale Memorial Hospital  
Result: Funded \$39,890 (6/27/88 - 12/31/88)  
Principal Investigator

4. "TLDs and Radiology"  
Panasonic Industrial Systems  
Result: Funded \$36,441 (1/1/89 - 12/31/89)  
Principal Investigator

5. "Radon Mitigation Demonstration: Southwest Tucson"  
Arizona Disease Control Research Commission  
Result: Funded \$44,400 (7/7/89 - 6/30/91)  
Principal Investigator for 1989/90, Consultant 1990/91

6. Presidential Young Investigator Award  
National Science Foundation  
Result: Funded \$312,500 (9/1/85 - 12/31/91)  
Principal Investigator

7. Cooperative Agreement for Services  
Emory University Department of Radiology  
Result: Funded \$90,488 (9/16/89-6/15/93)  
Principal Investigator
8. "Error Analysis of the Beta-Gamma Algorithm"  
Martin Marietta (Oak Ridge National Laboratory)  
Result: Funded \$26,000 (11/1/89 - 9/30/90)  
Principal Investigator
9. "SPECT Analysis of the Cerebral Cortex Using Anatomically Simulated Normal Images"  
Emory/Georgia Tech Biomedical Research Technology Center Seed Grant  
Result: Funded \$29,000 (7/1/90 - 6/30/91)  
Co-Principal Investigator
10. "Mixed Field Dosimetry Using Focused and Unfocused Laser Heating of Thermoluminescent Materials"  
Department of Energy  
Result: Funded \$254,777 (4/15/92 - 4/15/95)  
Principal Investigator
11. "Radiation Protection Management for Non-Military Nuclear Technologies in the Developing World Since 1955"  
National Science Foundation  
Result: Funded \$45,000 (9/1/94 - 8/31/96)  
Co-Principal Investigator (L. M. Calkins, P. I.)
12. "Research Involving Digital Radiography"  
Henry Ford Hospital (subcontract from Eastman Kodak and other sources)  
Result: Funded \$57,083 (1/1/95 - 12/31/96)  
Principal Investigator
13. "The Dual Integral Glow Analysis (DINGA) Method for Low LET Radiation Field Dosimetry: Panasonic Reader Experiments"  
Panasonic Industrial Corporation  
Result: funded \$16,000 (9/1/96-9/1/97)  
Principal Investigator
14. "High Fidelity Electronic Display of Digital Mammograms"  
U.S. Army Breast Cancer Research Program and Henry Ford Hospital  
Results: Funded \$75,000.  
Consultant (M. Flynn, P. I.)
15. "The Graduate Experience: A Model Recruitment and Retention Program for Women Graduate Students in Engineering and the Physical Sciences at the University of Michigan"  
Alfred P. Sloan Foundation  
Result: Funded \$159,815 for Year I (9/1/ 1995-8/31/1996), total 4 years  
Supervised staff and serve as general collaborator, 1995-1997
16. "Dual Integral Glow Analysis (DINGA) Method for Mixed Radiation Field Dosimetry"  
Department of Energy Health Physics Faculty Research Award Program  
Result: Funded \$150,000 (2/1/96-8/31/00)  
Principal Investigator
17. "Determination of Radionuclide Depth Distribution by Calibrated Gamma-Ray Spectroscopy"  
Department of Energy Small Business Innovation Research Grant (SBIR)

Phase I, Subcontract with Radiation Safety Engineering  
Result: \$100,000/6 months (September 2001-February 2002)  
Principal Investigator

18. "Graduate Fellowships in Health Physics at the University of Michigan"  
National Academy for Nuclear Training (NANT)  
Amount Requested and Awarded:  
Nov. 1996, 1 fellowship \$13,000 (9/97-8/98)  
Nov. 1997: 1 fellowship \$13,000 (9/98-8/99)  
Nov. 1998, 1 fellowship, \$14,000 (9/99-8/00)  
Nov. 1999, 1 fellowship, \$14,000 (9/00-8/01)  
Nov. 2001, 1 fellowship, \$14,000: funded (9/02-8/03)  
Nov. 2002, 1 fellowship, \$14,000: funded (9/03-8/04)  
Principal Investigator

19. "Advanced Radiation Dosimeters for Radiological Dose Assessments"  
Los Alamos National Laboratory , NMT-5, C-SIC  
Result: Awarded \$689,899 [includes \$58,000 U. M. cost-sharing] (June 2002-May 2007)  
Principle Investigator

## **B. Funded Internal Grants and Contracts (Selected)**

1. "Radiation Protection Management Experience in the Former Yugoslavia"  
Michigan Memorial-Phoenix Project Faculty Research Grant  
Amount Requested: \$6,000 October 1993  
Result: Funded \$5,000 (3/1/94 - 3/1/95) by U. M. O. V. P. R.  
Principal Investigator

4. "Biography of Elda E. Anderson"  
Rackham Faculty Research Grant  
Amount Requested; \$15,000. Submitted October 1995 (for 1/96-12/97)  
Result: Funded \$15,000 (1/1/96 - 12/31/97)  
Principal Investigator

5. "Gender and Access in Engineering Education at the University of Michigan"  
U. M. Institute for Research on Women and Gender Program for Support for Scholarly Activities  
on Women or Gender  
Amount Requested: \$10,000. Submitted Fall 1995  
Result: Funded \$2,000 (5/1/96-5/1/98)  
Principal Investigator

9. "Hazard Detection using Augmented Reality"  
U. M. 1997 Presidential Initiatives Fund  
Amount Requested: \$180,000 (1997-2000). Submitted Winter 1997  
Result: Funded \$110,000 (1997-2000)  
Participating Faculty (B. Stojadinovic, PI)

10. "Applied Environmental Radiation Measurements Laboratory"  
Elizabeth Caroline Crosby Research Fund  
College of Engineering, Associate Dean for Academic Affairs  
College of Engineering, Associate Dean for Research  
College of Engineering, NERS Department  
Office of Vice President for Research  
Amount Requested: \$20,000. Submitted April 2002.  
Result: Funded \$67,863 (2002-2003)

Principal Investigator

## **VI. SERVICE (selected)**

### **A. National Professional Leadership Activities**

1. Member, National Council on Radiation Protection and Measurements (NCRP) Scientific Subcommittee 57 (Dosimetry and Metabolism of Radionuclides), 1992-96.
2. Representative for Health Physics Society, Nuclear Regulatory Commission Enhanced Participatory Rulemaking Workshop on Radiological Controls for Decommissioning, Atlanta, 1993.
3. Member, Subcommittee on Radiation Cleanup Standards, National Advisory Council for Environmental Policy and Technology, U. S. Environmental Protection Agency, Office of Radiation and Indoor Air, 1993-1995.
4. Member, Advisory Committee of the U. S. Transuranium and Uranium Registries (USTUR), Washington State University, 1998-2001.
5. Member, Committee on Long-term Research Needs for Managing Transuranic and Mixed Wastes at DOE Sites, National Academy of Science, 2001-2002.

### **B. Professional Society Memberships**

American Association of Physicists in Medicine, American Association of University Women, American Nuclear Society, American Society for Engineering Education, Association of Women in Science, Eta Kappa Nu, Sigma Xi, Health Physics Society, Institute of Electrical and Electronics Engineers, International Radiation Physics Society, Order of the Engineer, Society of Nuclear Medicine, Society of Women Engineers,

### **C. Professional Society Activities**

#### ***American Nuclear Society***

##### *Active*

1. Member, Executive Committee of Education and Training Division, American Nuclear Society, 1997-2000, 2000-2003 (elected).
2. Member, Planning Committee, American Nuclear Society, 1997-2000, 2000-2003.
3. Member, Executive Committee of the Radiation Protection and Shielding Division (Group II), 2000-2003 (elected).
4. Member, ANS President's Blue Ribbon Task Group on Workforce Needs, 2001-present.
5. Division Memberships: Radiation Protection and Shielding; Education and Training; Biology and Medicine; Isotopes and Radiation; Decommissioning, Decontamination, and Reutilization; Nuclear Criticality Safety; Operations and Power

##### *Previous*

1. Advisor, A. S. U. American Nuclear Society Student Chapter, 1984-89.
2. Member, Executive Committee, Michigan Local Section of American Nuclear Society, 1993-95 (elected).
3. Member, Program Committee, American Nuclear Society University Working Conference, 1994-95.
4. Member, Professional Women in the American Nuclear Society Committee, American Nuclear Society, 1996-99.
5. Member, Scholarship Policy and Coordination Committee, American Nuclear Society, 1997-2000; Vice-Chair 1998-99.
6. President, American Nuclear Society Michigan Section, 1999-2000 (elected).
7. Member, Board of Directors, American Nuclear Society, 1996-99, 1999-2002 (elected).

#### ***Health Physics Society***

##### *Active*

1. Advisor, U. M. Health Physics Society Student Branch, 2000-present.

2. Section Memberships: Decommissioning, Environmental, Medical Health Physics, Power Reactors

*Previous*

1. Member, Board of Directors, Arizona Health Physics Society, 1985-87 (elected).
2. President, Arizona Health Physics Society, 1988-89 (elected).
3. Member, Health Physics Society, Manpower and Professional Education Committee, 1990-1992.
4. Member, Health Physics Society, Steering Committee for Formation of Health Physics Program Directors Organization, 1990-91.
5. Advisor, G. I. T. Health Physics Student Organization (later Student Branch), 1990-93.
6. Co-chair, Health Physics Society, Manpower and Professional Education Committee, 1991-92.
7. Member, Board of Directors, Health Physics Society, 1992-95 (elected).
8. Member, Steering Committee/Executive Board, Medical Health Physics Section, Health Physics Society, 1990-95 (elected).

***International Radiation Physics Society***

1. Vice President for North America, International Radiation Physics Society, 1997-99 (elected).

**D. On-Campus Committees and Service**

*Arizona State University (previous)*

1. Member, Radiation Protection Committee, 1986-88.
2. Member, Animal Care and Use Committee, 1987-89.
3. Member, Faculty Senate, 1987-89 (elected).
4. Member, Human Laboratory Subjects Committee, 1988-89.
5. Chair, Committee on Committees, 1988-89 (elected).
6. Member, Executive Committee, 1988-89.
7. Member, Dept. of Electrical and Computer Engineering, Executive Committee, 1988-89 (elected).
8. Chair, Dept. of Electrical and Computer Engineering, Undergraduate Curriculum Committee, 1988-89.

*Georgia Institute of Technology (previous)*

1. Member, School of Mechanical Engineering Graduate Committee, 1991-92, 1992-93.
2. Member, School of Mechanical Engineering, Faculty Advisory Committee, 1992-93 (elected).
3. Chair, School of Mechanical Engineering, Committee on Medical Physics, 1993.

***University of Michigan***

*Active*

1. Member, Dept. of Nuclear Engineering and Radiological Sciences, Curriculum Committee, 1994-2000, 2001-present.
2. Member, Radiation Policy Committee, 1999-present.
3. Chair, Dept. of Nuclear Engineering and Radiological Sciences, REM option, 2001-present.
4. Member, Radioactive Drug Research Committee (RDRC) Subcommittee on Human Use of Radioisotopes (SHUR), Dosimetrist, 2003-present.

*Previous*

1. Member, Department of Nuclear Engineering and Radiological Sciences, Executive Committee, 1993-95, 1998-2000 (elected).
2. Member, Michigan Memorial Phoenix Project Management Review Team, 1993-94.
3. Member, President's Advisory Commission on Women's Issues, 1993-95, 1995-96.
4. Member, Rackham College, Divisional Review Board in Physical Sciences and Engineering, 1994-96, 1999-01; Chair, 1995-96.
5. Program Advisor, College of Engineering, M. Eng. in Radiological Health Engineering, 1994-2000.
6. Member, Panel of Inquiry into Federally-Sponsored Human Radiation Research at the University of Michigan in the Post-World War II Period, 1994-96.

7. Facilitator, College of Engineering, Faculty Engineering Women (FEW) group, 1994-97.
8. Member, Office of Vice President for Minority Affairs, Faculty Awards Review Committee, Summer 1995, Fall 1995.
9. Member, Bioengineering Program, Committee on Undergraduate Bioengineering Curriculum, 1995.
10. Faculty Affiliate, College of Engineering, Minority Engineering Program Office (MEPO), 1996-97.
11. Member, Rackham School for Graduate Studies, Barbour Scholarship Review Panel, 1996-99.
12. Member, College of Engineering Honors and Awards Committee, 1997-99.
13. Member, College of Engineering, Curriculum Committee, 1999-2000 (elected).
14. Member, Rackham School for Graduate Studies, Divisional Board II Grant Review Panel, 1999-2001.

### **E. Engineering Consulting**

1. Methodist Medical Center of Illinois, Peoria, IL. PET Acquisition and Instrument Intercomparison, 1987, 1988.
2. Impra Inc., Tempe, AZ. Catheter Quality Assurance, 1987, 1988.
3. Sun Health Corporation, Sun City, AZ. PET Cost Analysis, 1987.
4. Samaritan Health Services, Phoenix, AZ. PET Clinical Applicability Analysis, 1987.
5. Cigna Healthplan of Arizona, Inc., Phoenix, AZ. Medical Physics Surveys for Radiography, Fluoroscopy, and Mammography, 1988.
6. W. L. Gore and Associates, Medical Products Division, Flagstaff, AZ. Radiography and Angiography Room Design, 1989.
7. United States District Court of Arizona, Phoenix, AZ. Expert Witness on Radiation Health Effects, Murder I Trial, 1989.
8. National Broadcasting System, Tempe, AZ. Technical Set Consultant, 1989.
9. Auburn University, Auburn, AL. Investigation of X-ray Diffractometer Exposure. 1991.
10. Advanced Systems Technology, Atlanta, GA. Cyclotron-producible Radionuclides for Medicine, 1991.
11. Nuclear Regulatory Commission, Washington DC. Advisory Committee on Nuclear Waste (ACNW), 1999-2001.
12. Bartlett Nuclear, Detroit Edison, Monroe, MI. Fermi 2 Nuclear Plant Refueling Outage 7 (RF07), Radiation Technologist, April-May 2000.
13. Consumers Power, Big Rock Point Restoration Project, Charlevoix, MI. Bulk Materials Release Program Review, June 2000.
14. University of Hong Kong, People's Republic of China, External Reviewer for Faculty of Science, October 2000.
15. Bartlett Nuclear, Consumers Power, South Haven, MI. Palisades Nuclear Plant Refueling Outage 2001 (RF2001), Senior Radiation Technologist, April 2001.
16. Park Metallurgical Laboratory, Detroit, MI. Evaluation of Radiation Exposures due to Naturally Occurring K-40 in Potassium-Containing Products, Consultant, May 2001.
17. Consumers Power Company, Review and Public Hearing on Landfill Disposal of Construction Debris, February 2003.

## **VII. LOCAL, NATIONAL and INTERNATIONAL PROFESSIONAL RECOGNITION (selected)**

### **A. Honors and Awards**

1. Governor General's Medal (Canada), St. Mary's University, 1975.
2. Engineering Medal, St. Mary's University, 1975.
3. U.S. E. R. D. A. Traineeship, University of Virginia, 1975-77.
4. Ida Green Fellowship, Massachusetts Institute of Technology, 1977-78.
5. N. I. H. Fellowship, Massachusetts Institute of Technology, 1978-79.

6. Whitaker Health Sciences Fund Fellowship, Massachusetts Institute of Technology, 1979-80.
7. Presidential Young Investigator Award, National Science Foundation, 1985-91.
8. Tetalman Memorial Award, Society of Nuclear Medicine, 1991.
9. U. S. Environmental Protection Agency Innovative Radon Mitigation Design Competition, 1992.
10. Career Development Award, University of Michigan, 1995.
11. Women's Achievement Award, American Nuclear Society, 1995.
12. Service Award, University of Michigan, College of Engineering, 1996.

**B. Invited Conference Session Chairs: 10**

**C. Professional Registrations**

1. National Registry of Radiation Protection Technologists (NRRPT), 1993-2000, 2001-2005.
2. American Board of Health Physics (ABHP), Certified Health Physicist (CHP), 1994-1997, 1998-2001, 2002-2005.
3. Northeast Utilities Examination, May 2001.

**D. Editorial and Reviewer Work for Technical Journals and Other Publications**

1. Associate Editor (Operational Topics), Health Physics Journal, 1991-present.
2. Reviewer, National Research Council/National Academy of Science, The Characterization of Remote-Handled Transuranic Wastes for the Waste Isolation Pilot Plant, November 2001.