

Nolan E. Hertel		
Professor		
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NOLAN E. HERTEL
PROFESSOR OF NUCLEAR AND RADIOLOGICAL ENGINEERING
G. W. WOODRUFF SCHOOL OF MECHANICAL ENGINEERING
MARCH 25, 2019

I. EARNED DEGREES

Ph.D., 1979, University of Illinois at Urbana-Champaign, Nuclear Engineering (co-Advisors: B. W. Wehring and J. J. Dorning)

M.S., 1975, Texas A&M University, Nuclear Engineering (Advisor: James B. Smathers)

B.S., 1973, Texas A&M University, Nuclear Engineering

II. EMPLOYMENT HISTORY

Professor, Georgia Institute of Technology, G. W. Woodruff School of Mechanical Engineering, Nuclear and Radiological Engineering Program, 7/1997 - present

Interim Chair of the Nuclear and Radiological Engineering and Medical Physics Programs, G. W. Woodruff School of Mechanical Engineering, 7/01/2016 – 7/31/2017.

Acting Director, Joint Faculty Appointment, Center for Radiation Knowledge, Environmental Sciences Division, Oak Ridge National Laboratory, 9/1/13-present.

Research Fellow, Sam Nunn Security Program, Georgia Institute of Technology, School of International Affairs, 8/1/04-7/31/07.

Affiliated Faculty, Center for International Strategy, Technology and Policy, Georgia Institute of Technology, 8/1/07-present.

Adjunct Professor, Department of Radiology, University of Texas Health Science Center-San Antonio, 2003-2007.

Chair, Nuclear Engineering, Radiological Engineering and Health Physics Research Group, G. W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, 1996 – 2002.

Director, Neely Research Center¹, Georgia Institute of Technology, 7/1997 – 6/2006.

Radiological Safety Officer, Office of Radiological Safety, Georgia Institute of Technology, 2003-2004.

Chair, Health Physics and Radiological Engineering Research Group, G. W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, 1994 – 1996.

Associate Professor, Georgia Institute of Technology, G. W. Woodruff School of Mechanical Engineering, Nuclear Engineering and Health Physics Program, 1993 - 1997.

Associate Professor, The University of Texas at Austin, Mechanical Engineering Department, Nuclear Engineering Area, 1985 - 1992.

Assistant Professor, The University of Texas at Austin, Mechanical Engineering Department, Nuclear Engineering Area, 1979 - 1985.

¹ The Neely Research Center housed the Georgia Tech Research Reactor (decommissioned in this time period) and a Co-60 irradiator with hot cell facility.

Research Assistant, University of Illinois, Nuclear Engineering Department, 6/1975 - 1/1979

Research Assistant, Texas A&M University, Nuclear Engineering Department, 6/1974 - 5/1975

Graduate Assistant, Texas A&M University, College of Engineering, CO-OP/JETS Programs, 5/1973 - 5/1974.

III. HONORS AND AWARDS

A. NATIONAL OR INTERNATIONAL AWARDS

Co-Advisor, Runner-up, American Nuclear Society Graduate Student Design Contest, 1991.

Co-Advisor, Winner, American Nuclear Society Graduate Student Design Contest, 1992.

Best Paper Award, Topical Meeting of the American Nuclear Society, Radiation Protection and Shielding Division: *New Horizons in Radiation Protection and Shielding*, 1992.

Air Force Institute of Technology, Distinguished Lecturer Series, 1992.

Best Paper Award, 1996 Winter Meeting of the American Nuclear Society, Radiation Protection and Shielding Division.

Outstanding Paper Award, 1997 Winter Meeting of the American Nuclear Society, Radiation Protection and Shielding Division.

Best Paper Award (Co-Winner), 1998 Winter Meeting of the American Nuclear Society, Radiation Protection and Shielding Division.

Los Alamos National Laboratory Certificate of Appreciation for Excellence in Science and Technology as exemplified in the study, "Laser Illuminated Track Etch Scattering Dosimetry System", 2001.

Glenn Murphy Award (for outstanding contributions to the practice and teaching of Nuclear Engineering), American Society for Engineering Education, Nuclear Engineering Division, 2004.

Technical Achievement Award, Atlanta Section of the American Nuclear Society, 2005.

Fellow of Health Physics Society, 2005.

2005 R&D 100 Entry, Los Alamos National Laboratory, LITES: A Laser Reader for Personal Neutron Dosimeters.

Radiation Protection and Shielding Division Service Award, American Nuclear Society, 2013.

Distinguished Scientific Achievement Award, Health Physics Society, 2016.

Rockwell Lifetime Achievement Award, Radiation Protection and Shielding Division, American Nuclear Society, 2018.

B. INSTITUTE OR SCHOOL AWARDS

Co-Advisor, Ed Hoffman, Winner of GIT's Sigma Xi Award for best MS Thesis, 1995.

Faculty of the Year, Graduate Student Government Association, Georgia Tech, 2006.

IV. RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITIES

A. PUBLISHED BOOKS, BOOK CHAPTERS, AND EDITED VOLUMES

A1. Books

1. *N. Petoussi-Henss, W.E. Bolch, K.F. Eckerman, A. Endo, N. Hertel, J. Hunt, M. Pelliccioni, H. Schlattl, and M. Zankl, ICRP Publication 116, Conversion Coefficients for Radiological Protection Quantities for External Radiation Exposures, The International Commission on

Radiological Protection and The International Commission on Radiation Units and Measurements, Elsevier, 2012. (C. H. Clement, editor)

A2. Refereed Book Chapters

1. "Glovebox Operations Advanced", Module 25-2, *Radioactive Material Handling Techniques*, Texas Education Research Center Nuclear Technology Series, 1980.
2. "Precipitation Techniques and Centrifugation", Module 23-4, *Nuclear Chemical Processes*, Texas Education Research Center Nuclear Technology Series, 1980.
3. *With R. D. Ice, E. Jawdeh, R.S. Eby, S.G. Marske, and L.A. Lundberg, Chapter 21 "*The Georgia Institute of Technology Research Reactor Decommissioning*," *Radiation Instruments*, Herman Cember (Ed.), Medical Physics Publishing, Madison, WI, 2001.
4. *With Eric A. Burgett, Elisa N. Hurwitz, Christopher J. Summers, Jeff Nause, Na Lu and Ian T. Ferguson, Chapter 12 "*The Growth of ZnO for Neutron Detectors*, *Handbook of Zinc Oxide and Related Materials: Volume Two, Devices and Nano-Engineering*, Zhe Chuan Feng (Ed.), Taylor and Francis, 2013.
5. *With Derek Jokisch, Chapter 8 "Dose Coefficients," *Advanced Radiation Protection Dosimetry*, in press, Francis and Taylor.

A3. Edited Volumes

**Advanced Radiation Protection Dosimetry*, chapter co-author and co-editor (with Shaheen Dewji), Commissioned by the Nuclear Regulatory Commission, in press at Francis and Taylor.

B. REFEREED PUBLICATIONS AND SUBMITTED ARTICLES

B1. Published and Accepted Journal Articles

1. N. E. Hertel and B. W. Wehring. Absolute Monitoring of DD and DT Neutron Fluences Using the Associated Particle Technique, *Nucl. Instr. Meth.* 172, 501-506 (1980).
2. N. E. Hertel and W. E. Murphie, The Use of Neutron and Gamma-Ray NE-213 Spectral Measurements and Calculations to Obtain Dosimetric Information for DT Neutrons, *Medical Physics* 10, 66-74 (1983).
3. N. E. Hertel and J. W. Davidson. The Response of Bonner Spheres from Thermal Energies to 17.3 MeV, *Nucl. Instr. Meth.* A238, 509-516 (1985).
4. N. E. Hertel, R. H. Johnson, J. J. Dorning and B. W. Wehring, Transmission of Fast Neutrons through an Iron Sphere, *Fusion Tech.* 9, 345-361 (1986).
5. R. S. Hartley, N. E. Hertel and J. W. Davidson, Neutron Multiplication in Beryllium, *Fusion Engr. Des.* 10, 133-138 (1989).
6. T. Parish, R. Carrera, N. E. Hertel and Elena Montalvo, Nuclear Radiation Analysis in the IGNITEX Ignition Experiment, *Fusion Tech.* 15, 459-464 (1989).
7. R. Carrera, M. Driga, J. H. Gully, N. E. Hertel, J. Hopf, K.T. Hsieh, E. Montalvo, C. Ordonez, T. Parish, M. N. Rosenbluth, W. A. Walls, W. F. Weldon, M. Werst and H. H. Woodson, Ignition Experiment in a Single-Turn-Coil Tokamak, *Fusion Tech.* 15, 402-409 (1989).
8. N. E. Hertel and J. C. McDonald, Calculations of Anisotropy Factors and Dose Equivalents for Unmoderated Cf-252 Sources, *Radiation Protection Dosimetry* 32, 77-82 (1990).
9. N. E. Hertel and J. C. McDonald, Methods for the Calibration of Photon Personnel Dosimeters in Terms of the Ambient Dose Equivalent, *Radiation Protection Dosimetry* 32, 149-156 (1990).

10. N. E. Hertel and J. C. McDonald, Calculated Dosimetric Quantities for D₂O-Moderated Cf-252 Sources, *Radiation Protection Dosimetry* 35, 23-30 (1991).
11. Y. Watanabe, T. A. Parish, W. D. Booth, R. Carrera, B. Shofolu and N. E. Hertel, Evaluation of Radiation Streaming Effects in A Single-Turn Ignition Tokamak, *Fusion Tech.* 19, 19-38 (1991).
12. N. E. Hertel and J. C. McDonald, Methods for the Calibration of Neutron Personnel Dosimeters in Terms of the Ambient Dose Equivalent, *Radiation Protection Dosimetry* 37, 149-156 (1991).
13. H. R. Vega Carrillo, C. Rios Martinez, L. L. Quirino Torres, N. E. Hertel and F. Iskander, Zinalco and Zircaloy-4 Nuclear Characterization, *J. Radioanal. Nucl. Chem.* 150, 171-175 (1991).
14. H. R. Vega Carrillo, N. E. Hertel, C. R. Martinez and L. L. Quirino Torres, Application of Bonner Sphere Spectrometer in Californium-252 Spectrometry, *Revista Mexicana de Fisica* 37, 659-664 (1991).
15. G. A. Miller, N. E. Hertel, B. W. Wehring and J. L. Horton, Gadolinium Neutron Capture Therapy, *Nuclear Technology* 103, 320-331 (1993).
16. B. K. Nabelssi and N. E. Hertel, Ambient Dose Equivalents, Effective Dose Equivalents, and Effective Doses for Neutrons from 10 to 20 MeV, *Radiation Protection Dosimetry* 48, 153-168 (1993).
17. B. K. Nabelssi and N. E. Hertel, Effective Dose Equivalents and Effective Doses for Neutrons from 30 to 180 MeV, *Radiation Protection Dosimetry* 48, 227-243 (1993).
18. B. K. Nabelssi and N. E. Hertel, Ambient Dose Equivalent, Deep Dose Equivalent Index, and ICRU Sphere Depth-Dose Calculations for Neutrons from 30 - 180 MeV, *Radiation Protection Dosimetry* 51, 169-182 (1994).
19. *N. E. Hertel, T. L. Johnson, Y. Lee and J. C. McDonald, Neutron Dosimetry with ²⁵²Cf-Iron Assemblies, *Radiation Protection Dosimetry* 58, 283-287 (1995).
20. *E. A. Hoffman, W. Stacey and N. E. Hertel, Dependence of Fusion Reactor Activated Wastes on Material Properties and on Physics and Technological Constraints, *J. Fusion Engineering Design* 29, 198-206 (1995).
21. *John L. Lobdell and N.E. Hertel, Photon Spectra and Dose Measurements Using a Tissue-Equivalent Plastic Scintillator, *Radiation Protection Dosimetry Journal* 72, 95-103 (1997).
22. *Karen Jones, Rodney D. Ice and Nolan Hertel, Biokinetic Model for ¹³⁷Cs in the Fetus, *Health Physics* 73, 736-746 (1997).
23. *John L. Lobdell and N. E. Hertel, Dose Rate Measurements in ¹⁶N and Non-¹⁶N Gamma-Ray Fields, *Radiation Protection Dosimetry* 74, 95-103 (1997).
24. ***K. G. Veinot**, N. E. Hertel and K. W. Brooks. Multisphere Neutron Spectral Measurements Near a High-Energy Medical Accelerator, *Health Physics Journal* 75, 285-290 (1998).
25. ***J. E. Sweezy**, N. E. Hertel, **K. G. Veinot** and R. A. Karam, Performance of a TLD-Based Multisphere Spectrometry System, *Radiation Protection Dosimetry* 78, 263-272 (1998).
26. H. R. Vega Carrillo, B. W. Wehring and N. E. Hertel. Response Matrix for a Multisphere Spectrometer Using a ⁶LiF Thermoluminescent Dosimeter, *Radiation Protection Dosimetry* 81, 133 – 140 (1999).
27. *S. Mitake, H. Masukawa, H. Kadotani, Y. Hoshiai, T. Amano, S. Ishikawa, M. R. Sutton and N. E. Hertel. GRTUNCL-3D: An Extension of the GRTUNCL Code to Compute R_{0Z} First-Collision Moments, *Journal of Nuclear Science and Technology*, Supplement 1, 471–474 (2000).

28. *N. E. Hertel, H. Pfeifer and D. G. Napolitano, Modification of SKYSHINE-III to Include Cask Array Shadowing, *Journal of Nuclear Science and Technology*, Supplement 1, 635 – 639 (2000).
29. ***M. R. Sutton**, N. E. Hertel and L. S. Waters, High-Energy Neutron Dosimetry, *Journal of Nuclear Science and Technology*, Supplement 1, 753 – 757 (2000).
30. ***K. G. Veinot** and N. E. Hertel, Measured and Calculated Angular Responses of Panasonic UD-809 Thermoluminescent Dosimeters to Neutrons, *Radiation Protection Dosimetry*, 95, 25-30 (2001).
31. ***J. Sweezy**, N. Hertel and **K. Veinot**, BUMS– Bonner Sphere Unfolding Made Simple: An HTML Multisphere Neutron Spectrometer Unfolding Package, *Nuclear Instruments and Methods A476*, 263-269 (2002).
32. ***M. E. Napolitano**, J. H. Trueblood, N. E. Hertel, and G. David, Mammographic x-ray Unit kilovoltage Test Tool Based on K-Edge Absorption Effect, *Medical Physics* 29, 2169-2176 (2002).
33. *M. E. Moore, R. E. Hermes, R. T. Devine, **H. J. Gepford** and N. E. Hertel, Laser Illuminated Track Etch Scattering (LITES) Dosimetry System, *Radiation Protection Dosimetry* 101, 43-45 (2002).
34. ***M. R. Sutton Ferenci** and N. E. Hertel, High-Energy Neutron Depth-Dose Distribution, Part I: Benchmark Experiments, *Radiation Protection Dosimetry* 107, 213-224 (2003).
35. *N. E. Hertel, **M. P. Shannon**, **Z.-L. Wang**, **M. P. Valenzano**, W. Mengesha, and R. J. Crowe, Neutron Measurements in the Vicinity of a Self-Shielded PET Cyclotron, *Radiation Protection Dosimetry* 108, 255-261(2004).
36. ***R. M. Howell**, M. Sutton Ferenci, T. Fox, L. W. Davis, and N. E. Hertel, Gold Foil Measurements of Secondary Neutron Dose from 15 MV and 18 MV IMRT, *Radiation Protection Dosimetry* 115, 508-512 (2005).
37. ***J. L. Anderson** and N. E. Hertel, Bremsstrahlung Doses from Natural Uranium Ingots, *Radiation Protection Dosimetry* 115, 298-301(2005)
38. ***H. O. Wooten**, D. J. Dudziak, D. E. Kornreich, and N. E. Hertel, Neutron/Photon Dose Rate Calculations for Sources in Glovebox Operations, *Radiation Protection Dosimetry* 115, 350-356 (2005).
39. *N. E. Hertel, J. E. Sweezy, J. K. Warkentin, and J. K. Shultis, Comparison of Skyshine Computational Methodologies, *Radiation Protection Dosimetry* 116, 525-533 (2005).
40. ***K. G. Veinot** and N. E. Hertel, Effective Quality Factors for Neutrons Based on the Revised ICRP/ICRU Recommendations, *Radiation Protection Dosimetry* 115, 536-541 (2005).
41. ***J. S. Sweezy**, N. E. Hertel, and A. Lennox. Filter, Collimating and Moderating Material to Achieve Boron Neutron Capture Enhanced Fast Neutron Therapy, *Radiation Protection Dosimetry* 116, 470-474(2005).
42. ***Z. Wang** and N. E. Hertel, Determination of Dosimetric Characteristics of OptiSeed™ Plastic Brachytherapy ¹⁰³Pd Source, *Applied Radiation And Isotopes* 63, 311-321 (2005).
43. *K. Veinot and N. Hertel, Response of Harshaw Neutron Thermoluminescence Dosimeters in Terms of The Revised ICRP/ICRU Recommendations, *Radiation Protection Dosimetry* 113, 442-448 (2005).
44. ***R. M. Howell**, M. S. Ferenci, N. E. Hertel, and G. D. Fullerton, Investigation of Secondary Neutron Dose for 18 MV IMRT, *Medical Physics* 32, 786-793 (2005).

45. ***K. Kelley**, N.E. Hertel, M. Devlin, E. Pitcher, and S. Mashnik, ^{148}Gd Production Cross Section Measurements for 600- and 800-MeV Protons on Tantalum, Tungsten and Gold, *Nuclear Physics A760*, 225-233 (2005).
46. ***R. M. Howell** and N. E. Hertel, RBE or Effective Dose to Evaluate the Effect of Different Beam Energies for IMRT, *Nucl. Instrum. Meth.* 562, 1024-1028 (2006).
47. ***Z. Wang**, N. E. Hertel, E. A. Burgett, and A. Lennox, Fermilab Neutron Therapy Facility Neutron Spectrum Determination by Threshold Foils, PoS (FNDA 2006) 041, 10 pages (Web Journal).
48. *R. Karam, D. Blaylock, **E. Burgett**, S. M. Ghiaasiaan, and N. Hertel, High Temperature Helium-Cooled Fast Reactor (HTHFR), *Energy Conversion and Management Journal* 47, 2794-2800 (2006).
49. ***Rebecca M. Howell**, Nolan E. Hertel, **Zhonglu Wang**, and **Jesson Hutchinson**, and Gary D. Fullerton, Calculation of Effective Dose from Measurements of Secondary Neutron Spectra and Scattered Photon Dose from Dynamic MLC IMRT for 6MV, 15MV, and 18MV Beam Energies, *Medical Physics* 33(2), 360-368 (2006).
50. *K. G. Veinot and N. E. Hertel, Photon Extremity Absorbed Dose and Kerma Conversion Coefficients, *Health Physics* 92, 179-185 (2007).
51. ***Z. Wang**, N. E. Hertel, and A. Lennox, Calibration of A Borated Tissue-Equivalent Ion Chamber, *Radiation Protection Dosimetry*, 126, 626-630 (2007).
52. ***Z. Wang**, J.D. Hutchinson, N. E. Hertel, **E. Burgett**, and R.M. Howell, Study of a Gold-Foil Based Multisphere Neutron Spectrometer, *Radiation Protection Dosimetry* 128, 289-293 (2008).
53. *C. Harrison, S. Weaver, C. Bertelsen, E. Burgett, N. Hertel, and E. Grulke, Polyethylene/Boron Nitride Composites for Space Radiation Shielding, *Journal of Applied Polymer Science* 109, 2529-2538 (2008).
54. ***H. Omar Wooten**, Donald J. Dudziak, Nolan E. Hertel, Drew E. Kornreich and Adam Davis, Purely Angular Effects of Photon Buildup Factors for Thin Shields of Lead, Iron, Aluminum, and Water, *Nuclear Science and Engineering* 159, 296-310 (2008).
55. ***Kimberly Burns** and Nolan Hertel, Monte Carlo Simulations to Determine Doses to Healthcare Providers After a Radiological Dispersion Device Event, *Nuclear Technology* 168, 820-823 (2009).
56. *Rebecca M. Howell, **Eric Burgett**, Nolan E. Hertel, Stephen F. Kry, Zhonglu Wang and Mohammad Salehpour, Measurement of High-Energy Neutron Spectra with a Bonner Sphere Extension (BSE) System, *Nuclear Technology* 168, 333-339 (2009).
57. ***Sarah Scarboro**, Nolan Hertel, **Eric Burgett**, Rebecca Howell, and Armin Ansari, Validation of Monte Carlo Simulation of a Thyroid Uptake System using Various Sources and a Slab Phantom, *Nuclear Technology*, 168, 169-172 (2009).
58. *Zhonglu Wang, Rebecca M. Howell, Stephen F. Kry, **Eric A. Burgett**, Nolan E. Hertel, and Mohammad Salehpour, Characterization of a Gold-and-Indium Dual-Activation-Foil-Based Bonner Sphere System, *Nuclear Technology* 168, 603-609 (2009).
59. *Eric A. Burgett, Nolan E. Hertel, and Rebecca M. Howell, Energy Response and Angular Dependence of a Bonner Sphere Extension, *IEEE Transactions On Nuclear Science* 56, 1325-1329 (2009).

60. *Rebecca M. Howell, Stephen F. Kry, **Eric Burgett**, David Followill and Nolan E. Hertel, Effects Of Tertiary MLC Configuration On Secondary Neutron Spectra From 18-MV X-Ray Beams For The Varian 21EX Linear Accelerator, *Medical Physics* 36, 4039-4046 (2009).
61. *Rebecca M. Howell, Stephen F. Kry, David Followill, **Eric Burgett** and Nolan E. Hertel, Secondary Neutron Spectra from Modern Varian, Siemens, and Elekta Linacs with Multileaf Collimators, *Medical Physics* 36, 4027-4038 (2009).
62. ***Jess Chandler** and Nolan Hertel, Choosing Reprocessing Technology: An Application of Multi-Attribute Utility Theory, *Progress in Nuclear Energy* 51, 701-708 (2009).
63. ***E. Burgett**, N. Hertel, T. Blue, J. Chenkovich, and J. Talnagi, Neutron Spectral Measurement of the Ohio State Research Reactor Pneumatic Tube, *Journal of Radioanalytical and Nuclear Chemistry* 282, 187-191 (2009).
64. *Z. Wang, R. M. Howell, E. A. Burgett, S. F. Kry, N E. Hertel and M. Salehpour, Calibration Of Indium Response Functions In An Au-In-BSE System Up TO 800 MeV, *Radiation Protection Dosimetry* 139, 563-573 (2010).
65. *R.M. Howell, E. A. Burgett, B. Wiegel, and N.E. Hertel, Calibration of a Bonner Sphere Extension (BSE) for High-Energy Neutron Spectrometer, *Radiation Measurements* 45, 1233-1237 (2010).
66. ***A. Melton**, **E. Burgett**, M. Jamil, T. Zaidi, N. Hertel and I. Ferguson, GaN as a Neutron Detection Material, IEEE Southeast Conference, 2010.
67. *K. G. Veinot and N. E. Hertel, Personal Dose Equivalent Conversion Coefficients for Photons to 1 GeV, *Radiation Protection Dosimetry* 145, 28-25 (2011).
68. *K. G. Veinot and N. E. Hertel, Personal Dose Equivalent Conversion Coefficients for Electrons to 1 GeV, *Radiation Protection Dosimetry* 149, 347-352 (2012).
69. ***R.P. Manger**, N.E. Hertel, E. A. Burgett, and A. Ansari, Using Handheld Plastic Scintillator Detectors to Triage Individuals Exposed to a Radiological Dispersal Device, *Radiation Protection Dosimetry* 150, 101-108 (2012).
70. ***Andrew G. Melton**, Eric Burgett, Tianming Xu, Nolan Hertel, and Ian T. Ferguson, Comparison of Neutron Conversion Layers for GaN-Based Scintillators, *Physica Status Solidi C*, 1-3 (2011).
71. ***R. C. Palmer**, N. E. Hertel, A. Ansari, **R. P. Manger** and **E. J. Freibert**, Evaluation of Internal Contamination Levels After a Radiological Dispersal Device Incident Using Portal Monitors, *Radiation Protection Dosimetry* 151, 237-251 (2012).
72. *W.E. Bolch, J.L. Hurtado, C. Lee, R. Manger, E. Burgett, N. Hertel, and W. Dickerson, Guidance On The Use Of Portable Survey Meters For Radiological Triage: Time-Dependent Detector Count Rate Thresholds Corresponding To 50, 250, and 500 mSv Effective Dose For Adult Males And Adult Females, *Health Physics* 102, 305-325(2012).
73. ***Andrew G. Melton**, Eric Burgett, Nolan Hertel and Ian T. Ferguson, GaN-Based Neutron Scintillators with a ⁶LiF Conversion Layer, *Material Research Society Symposium proceedings*, Volume 1396, DOI: 10.1557/ops.2012.238 (2012).
74. ***S. Dewji**, N. Hertel and A. Ansari, Assessing Internal Contamination After a Radiological Dispersion Device Using a 2x2-Inch Sodium Iodide Detector, *Radiation Protection Dosimetry* 155, 300-316 (2013).

75. *Nolan E. Hertel, **Taiee Liang**, **Timothy Cahill**, Michael L. Littleton, Scott A. Byers, and Eric A. Burgett, Neutron Dose Equivalent Rates In The Vicinity Of Waste Containers Containing TRU, *Progress in Nuclear Science and Technology* 4, 812-815(2014).
76. *A. Endo, N. Petoussi-Henss, W. E. Bolch, D. F. Eckerman, N. Hertel, J. Hunt, M. Pelliccioni, H. Schattl, M. Zankl and H. G. Menzel, An Overview of the ICRP/ICRU Adult Reference Computational Phantoms and Dose Conversion Coefficients, *Radiation Protection Dosimetry* 161, 11–16 (2014).
77. *Nina Petoussi-Henss, Wesley E. Bolch, Keith F. Eckerman, Akira Endo, Nolan Hertel, John Hunt, Hans G. Menzel, Maurizio Pelliccioni, Helmut Schattl, and Maria Zankl, ICRP Publication 116: the First ICRP/ICRU Application of the Male and Female Adult Reference Computational Phantoms, *Physics in Medicine and Biology* 59, 5209-5224 (2014).
78. *H. Heffner et al. (includes N. Hertel among a total of 49 authors in the NIFFTE collaboration), A Time Projection Chamber for High Accuracy and Precision Fission Cross Section Measurements, *Nuclear Instruments and Methods in Physics Research A* 759, 50–64 (2014).
79. *S. Dewji, M. Bellamy, N. Hertel, R. Leggett, S. Sherbini, M. Saba, K. Eckerman, Assessment Of Point Source Method For Estimating Dose Rates To Members Of The Public From Exposure To Patients With ¹³¹I Thyroid Treatment, *Health Physics* 109, 233-241 (2015).
80. ***M. Bellamy**, J. Puskin, N. Hertel and K. Eckerman, Empirical Method For Deriving RBE Values Associated With Electrons, Photons And Radionuclides, *Radiation Protection* 167, 664-670 (2015).
81. *S. Dewji, M. Bellamy, N. Hertel, R. Leggett, S. Sherbini, M. Saba, K. Eckerman, Estimated Dose Rates To Members Of The Public From External Exposure To Patients With ¹³¹I Thyroid Treatment, *Medical Physics* 42, 1851-1857 (2015).
82. *K. G. Veinot, K. F. Eckerman and N. E. Hertel, Organ and Effective Dose Coefficients for Cranial and Caudal Irradiation Geometries: Photons, *Radiation Protection Dosimetry* 168, 167-174 (2016).
83. ***S. A. Dewji**, E. L. Lee, S. Croft, N. E. Hertel, J. A. Chapman, R. D. McElroy, Jr, and S. Cleveland, Validation of Passive Gamma-Ray Detection Techniques for Safeguards Monitoring at Natural Uranium Conversion Facilities," *Nucl. Instrum. Meth.* A823, 135-148 (2016).
84. ***Sinem V. Kurudirek**, Nolan E. Hertel, Benjamin D. B. Klein, Mehmet Biber, and Christopher J. Summers, Development Of ZnO Nanorod-Based Scintillators Grown Under A Low-Temperature Hydrothermal Method For Use In Alpha-Particle And Thermal Neutron Detectors, *IEEE Transactions on Nuclear Science*, IEEE Transactions On Nuclear Science, 63 (6), 2842-2848 (2016).
85. *M. B. Bellamy, M. M. Hiller S. A. Dewji K. G. Veinot R. W. Leggett K. F. Eckerman C. E. Easterly N. E. Hertel, Comparison Of Monoenergetic Photon Organ Dose Rate Coefficients For Stylized And Voxel Phantoms Submerged In Air, *Radiation Protection Dosimetry* 172 (4): 367-374 (2016)
86. *M. B. Bellamy, M. M. Hiller, S. A. Dewji, K. G. Veinot, R. W. Leggett, K. F. Eckerman, C. E. Easterly, and N. E. Hertel, Comparison Of Monoenergetic Photon Organ Dose Rate Coefficients For Stylized And Voxel Phantoms Submerged In Air, *Radiation Protection Dosimetry* 172, 367–374 (2016).

87. *M. B. Bellamy, K. G. Veinot, M.M. Hiller, S. A. Dewji, K.F. Eckerman, C.E. Easterly, N. E. Hertel, R. W. Leggett and R. Manger, Effective Dose Rate Coefficients for Immersions in Radioactive Air and Water, *Radiation Protection Dosimetry*, 174, 275-286 (2017).
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C. OTHER PUBLICATIONS AND CREATIVE PRODUCTS

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54. ***John Stooksbury** and Nolan Hertel, "Surrogate Cf-252 Neutron Source Created by AmBe Neutrons," American Nuclear Society International Topical Conference, MARC XI: Eleventh International Conference on Methods and Applications of Radioanalytical Chemistry, Kona, HI, April 8-13, 2018.

C.2 Software

1. BUNKIUT - Modification of the Naval Research Laboratory's Bonner Sphere Unfolding Code for a PC.
2. GRTUNCL-3D - First-Collision Source Code for R- θ -Z Geometry written for CRC Research of Japan.
3. SKYSHINE-III- Created modules and modified the code to calculate dose rates in the vicinity of arrays of dry storage canisters for spent fuel.

C.4 Other Publications and Creative Activities

C.4.1 Technical Reports

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C4.2 OP-ED Pieces

1. *Nevada site perfect for nuclear waste*, Atlanta Journal-Constitution, December 21, 2001, Page A26.
2. *Nuclear Waste Awaiting Burial*, Guest Column, August Chronicle, Sunday, January 6, 2002.
3. *EPA Policies Discourage Energy Independence*, Atlanta-Journal Constitution, May 24, 2002, Page A22.
4. *Hitch Our Future To Nuclear Power*, Atlanta Journal-Constitution, November 19, 2004, Page A19.
5. *Nuclear Power Pro: Gas-Fired Plants Putting Energy System Off Balance*, Atlanta Journal-Constitution, May 2006, Page P11.
6. *State Should Tap Into Nuclear Recycling*, Atlanta Journal-Constitution, Wednesday, February 7, 2007, Page A15.
7. *Yucca Mountain is needed: Reid Working to Kill Nuclear Repository*, Atlanta Journal Constitution, July 27, 2007, Page A15.
8. *The Drought: Why Sweat? Tap Nuclear Power*, Atlanta Journal-Constitution, Wednesday, December 26, 2007, Page A19.
9. *Has The Time Come For Nuclear Power? YES: It's Safe, Clean, Cost-Effective*, Atlanta Journal-Constitution, Sunday, July 22, 2008, page E4.
10. *Nuclear Power Is Safer Than Ever*, Atlanta Journal-Constitution, March 6, 2008, Page A19.
11. *NUCLEAR OPTION*, Special to the Columbus Ledger-Enquirer (GA), *One Of The Best Hopes For Nuclear Power's Revival Is Also The Least Appreciated: The Outstanding Safety Record Of U.S. Nuclear Power Plants*, March 9, 2009, Page O1.
12. *Funds For Nuclear Reprocessing Sit Idle As Energy Needs Grow*, Atlanta Journal Constitution, Monday, November 2, 2009.
13. *PRO: Loans Will Spur Reliable Clean Energy And Thousands Of New Jobs*, Atlanta Journal Constitution, Tuesday, February 23, 2010.
14. *PRO: Concern About Plant Vogtle*, Atlanta Journal Constitution, Sunday, March 20, 2011.
15. *Why Georgia Needs Nuclear Power*, Savannah Morning News, January 19, 2012.
16. *New Reactors Make Sense for Our Future*, Readers Write Section of Atlanta Journal Constitution, February 17, 2012.
17. *Nuclear Energy: Vogtle Work Ensures Choice in Fuel Sources*, Readers Write Section of Atlanta Journal Constitution, February 24, 2013.
18. *Plant Vogtle Leads the Way with 'Nuclear Change'*, Insider Advantage Georgia, September 24, 2014.
19. *Nuclear Power Is Crucial In Ensuring The Reliability Of Nation's Electricity*, The Augusta Chronicle, October 9, 2016.
20. *The Public Service Commission's Proper Vogtle Decision*, with David Gattie (University of Georgia), James Magazine: Insider Advantage Georgia, January/February 2018.

D. PRESENTATIONS

D.1 Keynote Addresses and Plenary Lectures

1. *N. E. Hertel, E. Abelquist, S. Dewji, and J. Davis, *Review of a Radiation Protection Needs Workshop*, Opening Plenary Session, Health Physics Society Annual Meeting, July 2017.
2. N. Hertel, *Radiation Protection: What We Know, What We Don't Know and What We Need to Know*, American Nuclear Society, 20th Topical Meeting of the Radiation Protection and Shielding Division Topical Meeting, Plenary Session, August 2018.
3. *N. E. Hertel, *Doses to Members of the Public from I-131 Patient Release*, Plenary Presentation, 2018 Academic Annual Meeting of the China Radiation Protection Society Guangzhou, China.

D.2 Invited Conference and Workshop Presentations

1. N. E. Hertel and J. C. McDonald. Dose Equivalent and Phantoms in Conventional Calibration Practice, *Trans. Am. Nucl. Soc.*, 57, 219 (1988).
2. N. E. Hertel. New Dose Equivalent Quantities: Possible Directions for Neutron Dosimetry, 1989 Health Physics Society Annual Meeting, Albuquerque, NM, Special Session on the Implementation of the ICRU-39 Dose Equivalent Quantities.
3. N. E. Hertel. Neutron Fluence to Dose Conversion Factors: Which Ones?, Proceedings of the Eleventh DOE Workshop on Personnel Neutron Dosimetry, June 3-7, 1991, Las Vegas, NV, CONF-9106235 (PNL-SA-21596). .
4. *N. E. Hertel, J. S. Boland and W. J. Wepfer, The Georgia Tech M.S. H.P. Video Program, WATTEC '95, Knoxville, TN, February 21-23, 1995.
5. *N. E. Hertel and R. D. Ice, D & D of a Research Reactor -- An Owner's Perspective, TLG Services Decommissioning Conference: Breaking New Ground- D & D in the 21st Century, Captiva Island, FL, October 13-16, 2002.
6. *N. E. Hertel, H. Pfeifer, Z. J. Rose, Recent Modifications to the SKYSHINE-III Code for Use in the Analysis of Dose Distributions Around ISFSI Dry Storage Arrays, *Trans. Am. Nucl. Soc.* 87, 405406, 2002 (highlights of the 2002 RPSD Topical Meeting).
7. *N. E. Hertel, Accelerator Dosimetry: Past, Present, and Future Needs, Health Physics Society 2008 Midyear Topical Meeting, Oakland, CA, January 2008.
8. *Nolan Hertel, Physics Data and Modeling: How much can you really tell?, 20th International Conference on the Application of Accelerators in Research and Industry (CAARI 2008), Ft. Worth, Texas August 8-13, 2008. (Session NHS04: Physics and Modeling for National Homeland Security).
9. *E. Burgett and N. Hertel, Collimated Thermal Neutron Beam Line at Georgia Tech Graphite Pile Facility, *Trans. Am. Nucl. Soc.*, 99, 593-594 (2008). Best of ICRS11 Meeting Session.
10. *E. Burgett, N. Hertel, and R. Howell, Measurements of High Energy Neutron Spectra with a Bonner Sphere Extension (BSE) Measurement System, *Trans. Am. Nucl. Soc.*, 99, 564-565 (2008). Best of ICRS11 Meeting Session.
11. *N. E. Hertel, A. Endo, T. Sato, M. Pelliccioni, G. Simmer, M. Zankl and N. Petoussi-Henss, New ICRP Reference Phantoms and Recommendations: How Different are the Dose Conversion Coefficients?, 11th International Symposium on Neutron and Ion Dosimetry (NEUDOS11), Capetown, South Africa, October 12-16, 2009.

12. *Nolan E. Hertel, The Status of Occupational ICRU Dose Quantities and Upcoming Changes to ICPR 74, International Dosimetry and Records Symposium, Coeur D'Alene, ID, June 5-9, 2011.
13. *Nolan Hertel, What's New in Neutron Monitoring, 33rd International Dosimetry and Records Symposium, June 1-5, 2014, New Orleans, Louisiana.
14. *N.E. Hertel, D.T. Bartlett, G. Dietze, J-M. Bordy, A. Endo, G. Gualdrini, M. Pelliccioni, P. Ambrosi, B.R.L Siebert, K. Veinot, P. Ferrari, T. Otto, R. Behrens, Jean-Francois Bottollier, ICRU Committee Proposal on Operational Quantities for External Radiation Exposure, IM2015: International Conference on Individual Monitoring of Ionising Radiation April 20-24, 2015, Bruges, Belgium.
15. *N. E. Hertel and D. Bartlett, Revisions to ICRU Operational Quantities, ICRP Symposium on Radiological Protection Dosimetry: Historical Review and Current Activities, The University of Tokyo, Japan, February 18, 2016.
16. *Nolan E. Hertel, Developing a Radiation Protection Hub, 2016 National Council on Radiation Protection and Measurements Annual Meeting: Meeting the Needs of the Nation for Radiation Protection, Bethesda, Md, April 11-12, 2016.
17. *Nolan E. Hertel, The Role of the Scientific Review Group in the Russian Health Studies Programs: Key Contributions and Influence and Impact on Radiation Protection, IRPA14: 14th International Congress of the International Radiation Protection Association, May 9-13, 2016, Capetown, South Africa.

D.3 Conference Presentations

1. N. E. Hertel, V. A. Otte, J. B. Smathers, A. R. Smith and P. R. Almond, Fast Neutron Spectra for the TAMVEC 50-MeV d⁺-Be Neutron Treatment Beam, (abstract), *Med. Phys.*, 2, 152 (1975).
2. N. E. Hertel, R. Mertogul and B. W. Wehring, Effectiveness of Tungsten and Lead in Attenuation of Photoneutrons, (abstract), *World Federation in Nuclear Medicine and Biology Second International Congress*, September 17-21, 1978, Washington, D.C.
3. N. E. Hertel, W. E. Murphie and R. J. Calhoun. Measurements of Neutron and Gamma-Ray Spectra in a Phantom Irradiated with 14-MeV Neutrons, (abstract), 26th Annual Meeting of the Health Physics Society, Louisville, KY, *Health Physics*, 41, 887 (1981).
4. J. W. Davidson and N. E. Hertel, Bonner Ball Detection Responses for Neutrons from Thermal Energies to 17.3 MeV, (abstract), Health Physics Society Annual Meeting, Baltimore, MD, *Health Physics*, 45, 192 (1983).
5. N. E. Hertel, J. W. Davidson and R. M. Laucius, NE-213 Response Matrix for Neutron Spectrometry Up to 50-MeV, (abstract), Health Physics Society Annual Meeting, Baltimore, MD, *Health Physics*, 45, 192 (1983).
6. J. W. Davidson and N. E. Hertel, The Effect of Cadmium Covers on Bonner Sphere Responses, (abstract), *Proceedings of the Personnel Radiation Dosimetry Symposium*, Knoxville, TN, October 1984.
7. N. D. Poor and N. E. Hertel, A Comparison of Low-Level Radioactive Waste Storage and Disposal Alternatives, (abstract), Health Physics Society Annual Meeting, Chicago, IL (1985).
8. A. D. Gaines and N. E. Hertel, Calibration of Bonner Spheres at The University of Texas, (abstract), Health Physics Society Annual Meeting, Pittsburgh, PA, *Health Physics*, 50, Suppl. 1, 522 (1986).

9. N. D. Poor and N. E. Hertel. How to Evaluate a Low-Level Radioactive Waste Disposal Technology, (abstract), Health Physics Society Annual Meeting, Pittsburgh, PA, *Health Physics*, 50, Suppl. 1, 568 (1986).
10. N. E. Hertel and J. C. McDonald, Calculations of Dosimetric Quantities for Cf-252 Neutron Sources, (abstract), 1988 Health Physics Society Annual Meeting, Boston, MA, *Health Physics*, 54, S46 (1988).
11. R. Carrera, M. Barrington, R. Bickerton, W. D. Booth, Y. Chen, J. Dong, M. Driga, S. Eways, G. Fu, J. Gully, G. Hallock, J. Helton, N. E. Hertel, L. Hively, J. Howell, K. Hsieh, J. Ling, G. Miller, E. Montalvo, C. Ordonez, D. Palmrose, T. Parish, M. Rosenbluth, S. Tamor, D. Tesar, J. Van Dam, P. Varghese, A. Walls, W. Weldon, M. Werst and H. Woodson, IGNITEX Experiment, (abstract), *16th IEEE International Conference on Plasma Science*, Buffalo, NY, May, 1989, IEEE-89-CH-2760-7, 58 (1989).
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14. R. J. Charbeneau, N. E. Hertel, M. Becker and C. G. Pollard, Texas Low-Level Radioactive Waste Disposal Site Performance Assessment, (abstract) 1990 Health Physics Society Annual Meeting, Anaheim, CA, June 24-28, 1990, *Health Physics*, 58, Suppl. 1, S35 (1990).
15. J. Smathers, N. E. Hertel and L. Meyers, Benchmarking Shield Calculations for 46-MeV (p,Be) Neutron Sources with Bonner Sphere Measurements, (abstract), 1990 Health Physics Society Annual Meeting, Anaheim, CA, June 24-28, 1990, *Health Physics*, 58 Suppl. 1, S53 (1990).
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17. D. E. Palmrose, T. A. Parish, R. Carrera and N. E. Hertel, Assessment of Structural Activation in the Operation of the Fusion Ignition Experiment IGNITEX, (abstract) 1990 IEEE International Conference on Plasma Science, IEEE-90-CH (1990).
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 23. N. E. Hertel, H. R. Vega Carrillo, B. K. Nabelssi, B. W. Wehring, C. A. Shriver, C. E. Johannes and P. A. Jerabek, Neutron Spectra Measured in the Vicinity of a PET Cyclotron, Works-in-Progress, presentation at the 37th Annual Health Physics Society Meeting, Columbus, OH, June 21-25, 1992.
 24. B. K. Nabelssi and N. E. Hertel, Calculations of Dose Equivalent Quantities for High-Energy Neutrons Using Homogeneous and Heterogeneous Phantoms, (abstract), 38th Annual Meeting of the Health Physics Society Meeting, Atlanta, GA, July 1993, *Health Physics*, 64, Suppl. 1, S48 (1993).
 25. S. C. Miller, R. S. Hartley and N. E. Hertel, AFITBUNKI: A modified Iterative Code to Unfold Neutron Spectra from Bonner Sphere Data, (abstract) 38th Annual Meeting of the Health Physics Society Meeting, Atlanta, GA, July 1993, *Health Physics*, 64, Suppl. 1, S48 (1993).
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 27. *N. E. Hertel and W. J. Wepfer, The Georgia Tech Health Physics Program: Building on a Tradition of Excellence, 28th Midyear Topical Meeting of the Health Physics Society, *Health Physics Training and Education*, January 29 - February 1, 1995.
 28. *N. E. Hertel, J. S. Boland and W. J. Wepfer, The Georgia Tech MS HP Video Program, 28th Midyear Topical Meeting of the Health Physics Society, *Health Physics Training and Education*, January 29 - February 1, 1995.
 29. *M. E. Napolitano, J. H. Trueblood and N. E. Hertel, Mammographic X-Ray Beam Peak Determination Using Film Densitometry, Health Physics Society - American Association of Physicists in Medicine Joint Annual Meeting, Boston, MA, July 23-29, 1995.
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 31. *N. E. Hertel, Georgia Tech's Health Physics Program: An Increasing Emphasis on Health Risk Assessment and Radiological Engineering, National Conference on Bachelor of Science Degree Programs in Health Physics, Francis Marion University, Florence, SC, November 17-18, 1995.
 32. *J. L. Lobdell and N. E. Hertel, Dose Rate and Spectral Measurements Around a Large BWR, (abstract) 1996 Health Physics Meeting, Seattle, WA, July 22-26, 1996, *Health Physics*, 70, Suppl. 1, S89 (1996).
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34. *K. G. Veinot, N. E. Hertel and K. W. Brooks, Multisphere Neutron Spectra Measurements Near a 25-MV Medical Accelerator, (abstract) 42nd Annual Health Physics Society Meeting, San Antonio, TX, June 29 - July 3, 1997, *Health Physics*, 72, #6, Supplement S45 (1997).
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37. *H. J. Gepford, M. R. Sutton, N. E. Hertel, L. S. Waters, High-Energy Neutron Depth-Dose Distribution Determination with Neutron Track-Etch Detectors, 44th Annual Meeting of the Health Physics Society, Philadelphia, PA, June 27 - July 1, 1999, *Health Physics* 76, S186 (1999). (Abstract)
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39. *K. G. Veinot and N. E. Hertel, Angular Dependence of Neutron Effective-Dose-Equivalent for Calibration Geometries, 44th Annual Meeting of the Health Physics Society, Philadelphia, PA, June 27 - July 1, 1999, *Health Physics* 76, S113 (1999). (Abstract).
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11. *N. E. Hertel, Z.-L. Wang, J. E. Sweezy and M. Sutton Ferenci, Integral Measurement of the Low-Energy Tail of a Spallation Neutron Source using Moderated Foil-Activation Techniques, 10th International Conference on Radiation Shielding, Madeira, Funchal, Portugal, May 9-12, 2004, Oral Presentation Only.
12. *R.M Howell and N.E. Hertel, Determination of Neutron Dose from Intensity Modulated Radiotherapy using Threshold Detector Measurements in Phantom, (abstract), (2006 Fast Neutron Detection and Applications Meeting), Capetown, South Africa, April 2-6, 2006.
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18. *J. Hutchinson, R. Lorio, Z. Wang and N. Hertel, Assaying Lung Contamination After A Radiological Dispersion Device Event, 51st Annual Meeting of the Health Physics Society, Providence, RI, June 25-29, 2006, Health Physics 90S, S151-S152 (2006).
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20. *S. Dewji, N. Hertel, and K. Burns, Estimating Doses to Healthcare Providers after an RDD Event, 52nd Annual Meeting of the Health Physics Society, Portland, OR, July 9-12, 2007, Health Physics 93S, S89-S90 (2007).
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25. *Michael Shannon, Nolan Hertel, Daren Norman, James Jones and Kevin Haskell, An Approach to Dosimetry for High-Energy Bremsstrahlung Systems Operating in Outdoor Environments, Health Physics Society 2008 Midyear Topical Meeting, Oakland, CA, January 2008.
26. *Eric Burgett and Nolan Hertel, Collimated Thermal Neutron Beam Line at Georgia Tech Graphite Pile Facility, 11th International Conference on Radiation Shielding (ICRS11) and 15th Topical Meeting of the ANS Radiation Protection and Shielding Division, Callaway Gardens, GA, April 13-18, 2008.
27. *Eric Burgett, Nolan E. Hertel, Courtney Harrison and Eric Grulke, Nanoparticle Radiation Shielding Performance Testing, 11th International Conference on Radiation Shielding (ICRS11) and 15th Topical Meeting of the ANS Radiation Protection and Shielding Division, Callaway Gardens, GA, April 13-18, 2008.
28. *Nolan E. Hertel, Ryan Manger, Sarah Scarboro, Christina LoBracco, Shaheen Dewji, Michael Bellamy, Eric Burgett, and Michael Shannon, Assessing Internal Contamination After an RDD Event, 12th International Congress of the International Radiation Protection Association, October 19-24, 2008, Buenos Aires, Argentina.
29. *M. Shannon, N. Hertel, D. Norman, and J. Jones, Calculations of Buildup for a 20-MeV Collimated Bremsstrahlung Beam, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S25 (2008).
30. *M. Shannon, N. Hertel, D. Norman and J. Jones, Assessment of Regulatory Requirements for Operating Active Interrogation systems in Support of National Security Applications, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S32 (2008).
31. *E. Burgett, N. Hertel, C. Harrison and E. Grulke, Neutron Transmission Measurements Through Novel Nanoparticle Shielding Material, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S73 (2008).
32. *N. Hertel, A Review of High-Energy Dose Conversion Coefficients, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S45 (2008).
33. *E. Colvin, N. Hertel and C. McKay, Study of the Subsurface Radiation Environment in the Canadian Arctic, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S53 (2008).
34. *E. Burgett and N. Hertel, The New Health Physics Option in the NRE Master's Degree at Georgia Tech, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S61 (2008).
35. *M. Bellamy and N. Hertel, Internal Radioactivity Level Estimation by Depth Deconvolution, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S91 (2008).

36. *S. Dewji, N. Hertel, S. Scarboro, and R. Manger, Assessing Internal Contamination After an RDD Event Using Readily Available NaI Detectors, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S92 (2008).
37. *C. LoBracco and N. Hertel, Using a Dose Rate meter to Assess Internal Dose Following A Radiological Dispersion Device, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S92 (2008).
38. *R. Manger and N. Hertel, Assessing Internal Dose After a Radiological Dispersion Device with a GM Detector, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S92(2008).
39. *S. Scarboro, N. Hertel, E. Burgett and R. Howell, Assaying Internal Contamination Following a Radioactive Dispersal Device Using a Thyroid Probe, 53rd Annual meeting of the Health Physics Society, Pittsburgh, PA, *Health Physics* 95, S93 (2008).
40. *M. P. Shannon and N. E. Hertel, Measurements of High Energy Photon Dose from an Outdoor Accelerator-based Source, 54th Annual Meeting of the Health Physics Society, Minneapolis, MN, *Health Physics* 97, S42 (2009).
41. *E. Burgett, N. Hertel and E. Howell, A Low Cost High Energy Neutron Spectrometer Extension to a Bonner Sphere Spectrometer, 54th Annual Meeting of the Health Physics Society, Minneapolis, MN, *Health Physics* 97, S42 (2009).
42. *N. E. Hertel, New ICRP Reference Phantoms and Recommendations: How Large a Difference?, 54th Annual Meeting of the Health Physics Society, Minneapolis, MN, *Health Physics* 97, S44 (2009).
43. *E. Burgett, N. Hertel, B. Quintrell, S. Sheffield, M. Pearson and R. Cowan, Low Energy X-Ray Field Characterization Around a High Current Low Voltage Projectile Device, 54th Annual Meeting of the Health Physics Society, Minneapolis, MN, *Health Physics* 97, S99 (2009).
44. *E. Burgett and N. Hertel, Using the Thermo IdentifINDER Handheld Spectrometer as an Internal Contamination Screening Tool Following an RDD Event, 54th Annual Meeting of the Health Physics Society, Minneapolis, MN, *Health Physics* 97, S105 (2009).
45. *R. P. Manger, R. C. Palmer and N. E. Hertel, Evaluation of Internal Contamination Levels After a Radiological Dispersion Device Using Portal Monitors, 54th Annual Meeting of the Health Physics Society, Minneapolis, MN, *Health Physics* 97, S105 (2009).
46. *E. Burgett, N. Hertel, D. Sahin and K. Ünlü, A Comparison of Measured Neutron Spectra in the PSU Breazeale Reactor Neutron Beam, Methods and Applications of Radioanalytical Chemistry (*MARC-VIII Meeting*), Kona, Hawaii, March 2009.
47. *Randahl Palmer, Eric Burgett, Nolan Hertel and Armin Ansari, Evaluation of Internal Contamination Levels after a Radiological Dispersion Device Using Portal Monitors, 55th Annual Meeting of the Health Physics Society, Salt Lake City, UT, June 27-July 2, 2010, *Health Physics* 99, S79(2010).
48. *Nolan Hertel and Ken Veinot, A Review of Personal and Ambient Dose Equivalent, 55th Annual Meeting of the Health Physics Society, Salt Lake City, UT, June 27-July 2, 2010, *Health Physics* 99, S41(2010).
49. *Dominic Napolitano and Nolan Hertel, Shielding Evaluations for a Food Irradiation Facility, 55th Annual Meeting of the Health Physics Society, Salt Lake City, UT, June 27-July 2, 2010, *Health Physics* 99, S95(2010).

50. *Nolan E. Hertel, Eric Burgett and Robin Shult, Activation Calculations to Support the Decommissioning of SEFOR, 55th Annual Meeting of the Health Physics Society, Salt Lake City, UT, June 27-July 2, 2010, *Health Physics* 99, S51(2010).
51. *E. A. Burgett, N. E. Hertel, J. Nause, and Ian Ferguson, Doped Ultrafast Zinc Oxide Scintillators as the Near Term Replacement for ³He, SORMA 2010, May 2010.
52. *E. Burgett, N. Hertel, C. Summers, and B. Klein, The Photonic Crystal Scintillator, SORMA 2010, May 2010.
53. *E. A. Burgett, N. E. Hertel, A. Melton, I. Ferguson, and C. Summers, Thermal Neutron Scintillators Grown by MOCVD, CAARI 2010: 21st International Conference on the Application of Accelerators in Research and Industry, Ft. Worth, Texas, August 2010.
54. *R. Palmer, N. Hertel, A. Ansari, and E. Burgett, Use of Portal Monitors for Evaluation of Internal Contamination after a Radiological Dispersal Device, Health Physics Society 44th Midyear Meeting, Charleston, SC, February 6-9, 2011.
55. *E. Freibert, N. Hertel, and A. Ansari, Assessing Internal Contamination Levels for Fission Product Inhalation Using a Portal Monitor, Health Physics Society 44th Midyear Meeting, Charleston, SC, February 6-9, 2011.
56. *N. E. Hertel, D. Blaylock, T. Cahill, E. Burgett, P. Exline, C. Olson, R. Adams, M. McGreal, Determination of a Site-Specific Spectrum Correction Factor in the Vicinity of the Holtec MPC During Drying in the Keuwanee Nuclear Power Station, Health Physics Society 44th Midyear Meeting, Charleston, SC, February 6-9, 2011.
57. *K. G. Veinot, N. E. Hertel, and M. R. Sutton-Ferenci, Neutron Operational and Protection Quantity Conversion Coefficients Under ICRP-26, ICRP-60, and ICRP-103, Health Physics Society 44th Midyear Meeting, Charleston, SC, February 6-9, 2011.
58. *K. G. Veinot, N. E. Hertel, and M. R. Sutton-Ferenci, Personal Dose Equivalent Conversion Coefficients for Electrons, Photons, and Positrons, Health Physics Society 44th Midyear Meeting, Charleston, SC, February 6-9, 2011.
59. *M. Bellamy, K. Eckerman, and N. Hertel, A Biophysical Model for Estimating the Relative Biological Effectiveness of Photons and Electrons, 56th Annual Meeting of the Health Physics Society, Palm Beach, FL, 26-30 June 2011, *Health Physics* 101S, S59 (2011).
60. *Nolan E. Hertel, Ultrafast Large Area ZnO Thermal Neutron Scintillators for a Near Term Replacement of He-3, UITI2011, University and Industry Technical Interchange Review Meeting, The Office of Nonproliferation and Verification Research and Development, Oakland, CA, December 6-8, 2011.
61. *C. J. Summers, J. Blair, B. J. Connors, B. Klein, N. E. Hertel and E. A. Burgett, Photonic Crystal Designs for Enhancing Radiation Detector Performance, 10th Mediterranean Workshop and Topical Meeting, "Novel Optical Materials and Applications", Cetraro, Italy 7-12th June 2011.
62. *T. Liang, N. E. Hertel, D. P. Blaylock, W. D. Kulp, T. Cahill, C. Olson and R. Adams, Full-Power, In-Containment Neutron Dose Rates at Kewaunee Nuclear Plant, 57th Annual Meeting of the Health Physics Society, July 22-26, 2012, Sacramento, CA.
63. *Nolan E. Hertel, Taiee Liang, Timothy Cahill, Michael L. Littleton, Scott A. Byers, and Eric A. Burgett, Neutron Doses at the Transuranic Waste Processing Center, 57th Annual Meeting of the Health Physics Society, July 22-26, 2012, Sacramento, CA.

64. *Adam Stulberg, Nolan Hertel, and Liz Dallas, Experience of the Georgia Institute of Technology, Round Table Discussion on Incorporating CGBT in Academic Curricula and Feedback on the Academic Value of CDI, Engaging the Experts, Training the Trainers: A Seminar on CTBT Education in the 21st Century, June 11-12, 2012, Vienna, Austria.
65. *Nolan E. Hertel and Peter Exline, Cf-252 and AmBe Based Neutron Fields, Oral Presentation only at the 12th International Conference on Radiation Shielding, Nara, Japan, September 3-7, 2012.
66. *Nolan E. Hertel, Is Ethics the Only Way?, Ethics in Engineering – Panel, 2012 American Nuclear Society Winter Meeting, November 11-15, 2012, San Diego, California.
67. *D. T. Bartlett, G. Dietze and N. E. Hertel, Operational Dose Quantities for External Radiation Exposure: Deficiencies and Options, 5th Multidisciplinary European Low Dose Initiative (MELODI) Workshop, October 7-10, 2013, Brussels, Belgium.
68. *David Thomas Bartlett, Nolan Hertel, Günther Dietze, Jean-Marc Bordy, Akira Endo, Gianfranco Gualdrini, Maurizio Pelliccioni, Peter Ambrosi, Paolo Ferrari, Thomas Otto, Bernd Siebert, and Ken Veinot, ICRU Review of Operational Quantities for External Radiation Exposure - Options for a Modified System, The European Radiation Dosimetry Group (EURADOS) Winter School, Budapest, Hungary, February 2014.
69. *D.T. Bartlett, G. Dietze, N.E. Hertel, J-M. Bordy, A. Endo, G. Gualdrini, M. Pelliccioni, P. Ambrosi, B.R.L Siebert, and K. Veinot, ICRU Review of Operational Quantities for External Radiation Exposure: Time for a Change?, International Radiation Protection Association 4th European IRPA Conference, June 23-27, 2014.
70. *K. F. Eckerman, M. b. Bellamy, R. P. Manger, CE. Easterly, R. W. Leggett, D. J. Steward, and N. E. Hertel, Exposure-to-Dose Coefficients for General Application, 6th International Experts' Meeting on Radiation Protection after the Fukushima Daiichi Accident, Vienna, Austria, February 17-21, 2014.
71. *Emily Freibert Boulier, Nolan Hertel, Randahl Palmer and Armin Ansari, Fission Product Screening Using a Portal Monitor, 6th International Experts' Meeting on Radiation Protection after the Fukushima Daiichi Accident, Vienna, Austria, February 17-21, 2014.
72. *Sarah Scarboro, Randahl Palmer, Nolan Hertel, Mary Anne Yusko, and Armin Ansari, Capintec Captus 3000 Thyroid Uptake System as a Monitor of Internal Contamination Levels, 6th International Experts' Meeting on Radiation Protection after the Fukushima Daiichi Accident, Vienna, Austria, February 17-21, 2014.
73. *S. Dewji, M. Bellamy, N. Hertel, R. Leggett, K. Eckerman, S. Sherbini and M. Saba, Estimated Doses to members of the Public from Exposure to Patients with I-131 Thyroid Treatment. Part I: Comparison to Point Source Methods, 59th Annual Meeting of the Health Physics Society, Baltimore, MD, 13-17 July 2014, Health Physics 107S, S67 (2014).
74. *S. Dewji, M. Bellamy, N. Hertel, R. Leggett, K. Eckerman, S. Sherbini and M. Saba, Estimated Doses to members of the Public from Exposure to Patients with I-131 Thyroid Treatment. Part II: Dose to the Persons Riding Public Transportation, 59th Annual Meeting of the Health Physics Society, Baltimore, MD, 13-17 July 2014, Health Physics 107S, S67 (2014).
75. *S. Dewji, M. Bellamy, N. Hertel, R. Leggett, K. Eckerman, S. Sherbini and M. Saba, Estimated Doses to members of the Public from Exposure to Patients with I-131 Thyroid Treatment. Part III: Dose to the Occupants in Nursing Homes and Hotels, 59th Annual Meeting of the Health Physics Society, Baltimore, MD, 13-17 July 2014, Health Physics 107S, S67-68 (2014).

76. *N. Hertel, S. Dewji, M. Bellamy, R. Leggett, K. Eckerman, S. Sherbini and M. Saba, Some Estimates of Internal Doses due to I-131 Patients, 59th Annual Meeting of the Health Physics Society, Baltimore, MD, 13-17 July 2014, Health Physics 107S, S68 (2014).
77. *Nolan Hertel, David Bartlett, Günther Dietze, Jean-Marc Bordy, Akira Endo, Gianfranco Gualdrini, Maurizio Pelliccioni, Peter Ambrosi, Paolo Ferrari, Thomas Otto, Bernd Siebert, and Ken Veinot, ICRU Review of Operational Quantities for External Radiation Exposure: What will the Future Hold?, 59th Annual Meeting of the Health Physics Society, Baltimore, MD, 13-17 July 2014, Health Physics 107S, S111 (2014).
78. *M. Bellamy, K. Eckerman, C. Easterly, R. Leggett, D. Steward, and N. Hertel, Dose Rate Coefficients for Exposure to Ground Contamination, Health Physics Society 48th Midyear Meeting, Norfolk, VA, February 1-4, 2015.
79. *M. Bellamy, K. Eckerman, C. Easterly, R. Leggett, D. Steward, and N. Hertel, Updated External Dose Coefficients for Air Submersion and Water Immersion, Health Physics Society 48th Midyear Meeting, Norfolk, VA, February 1-4, 2015.
80. *K. F. Eckerman, M. B. Bellamy, R. P. Manger, C. E. Easterly, R. W. Leggett, J. C. Ryman, D. J. Stewart, N. E. Hertel, FGR15 External Exposure To Radionuclides in Soil, Air, and Water: Methods and Status, Baltimore-Washington Chapter of the Health Physics Society Annual Workshop, Rockville, MD, May 8, 2015.
81. *Nolan E. Hertel, Is the Time Right for a Radiation Protection Research and Educational Hub?, 60th Annual Meeting of the Health Physics Society, Indianapolis, Indiana, 12-16 July 2015, Health Physics 109S, S117-118 (2015).
82. *L. Finklea, N. Hertel, F. Dolislager, and M. Bellamy, Room dose Ratios in Comparison to FGR12 Dose Coefficients?, 60th Annual Meeting of the Health Physics Society, Indianapolis, Indiana, 12-16 July 2015, Health Physics 109S, S4 (2015).
83. *Nolan E. Hertel, How Many Phantoms Do We Need for Radiation Protection?, 60th Annual Meeting of the Health Physics Society, Indianapolis, Indiana, 12-16 July 2015, Health Physics 109S, S56 (2015).
84. *K. G. Veinot, K. F. Eckerman and N. E. Hertel, Photon and Neutron Organ and Effective Dose Coefficients for Cranial and Caudal Irradiation Geometries, 60th Annual Meeting of the Health Physics Society, Indianapolis, Indiana, 12-16 July 2015, Health Physics 109S, S89 (2015).
85. *S. Dewji and N. Hertel, Critical issues in Knowledge management in Domestic Radiation Protection Research Capabilities, 60th Annual Meeting of the Health Physics Society, Indianapolis, Indiana, 12-16 July 2015, Health Physics 109S, S131-132 (2015).
86. *Michael Bellamy, Shaheen Dewji, Guruprasad Kora, Mauritius Hiller, Nolan Hertel, Keith Eckerman, Sami Sherbini, and Mohammad Saba, Enhancements to the Phantom wIth Moving Arms and Legs Software (PIMAL 4.0), Midyear Meeting of the Health Physics Society, Austin, Texas, January 31-February 3, 2016.
87. *M. B. Bellamy, M. M. Hiller, S. A. Dewji, K. G. Veinot, R. W. Leggett, K. F. Eckerman, C. E. Easterly, N. E. Hertel, Comparison Of Monoenergetic Photon Organ Dose Rate Coefficients For Stylized And Voxel Phantoms Submerged In Air, Midyear Meeting of the Health Physics Society, Austin, Texas, January 31-February 3, 2016.
88. *Ken Veinot,*, Shaheen Dewji, Michael Bellamy, Keith Eckerman, Nolan Hertel, and Mauritius Hiller, Room Submersion Calculations of Noble Gas Dose Rate Coefficients,

- IRPA14: 14th International Congress of the International Radiation Protection Association, May 9-13, 2016, Capetown, South Africa.
89. *M. B. Bellamy, K. Veinot, K. F. Eckerman, S. A. Dewji, M. Hiller, C. E. Easterly, N. E. Hertel, R. W. Leggett, Comparison of Federal Guidance Reports 12 and 15: External Exposure to Radionuclides in Soil, Air, and Water, IRPA14: 14th International Congress of the International Radiation Protection Association, May 9-13, 2016, Capetown, South Africa.
 90. *Shaheen Dewji, Mauritius Hiller, Nolan Hertel, Sami Sherbini, and Mohammad Saba, PIMAL: A GUI-Driven Software Package To Conduct Radiation Dose Assessments Using Realistic Phantom Postures, IRPA14: 14th International Congress of the International Radiation Protection Association, May 9-13, 2016, Capetown, South Africa.
 91. *Canek Fuentes-Hernandez, Talha M. Khan, Larissa Diniz, John Stooksbury, Nolan E. Hertel and Bernard Kippelen, Thin-film Large-area Organic Detectors for Ionizing Radiation, 2016 IEEE Symposium On Radiation Measurements And Applications (SORMA), May 22-26, Berkeley, CA.
 92. *N.Petoussi-Henss, M. Bellamy, W. Bolch, K. Eckerman, A. Endo, N. Hertel, J. Hunt, J. Jansen, C. H. Kim, C. Lee, D. Satoh, K. Saito, H. Schlattl, Y. S. Yeom, S. J. Yoo, and J. Harrison, ICRP activities on Dose Coefficients for Members of the Public from External Exposures to Environmental Sources, Radiation Protection Week, Oxford, England, September 19-23, 2016.
 93. *M. Hiller, K.G. Veinot, K.F. Eckerman, and N.E. Hertel, Cranial and Caudal Dose Coefficients for Photons and Neutrons Up to 10 GeV, Radiation Protection Week, Oxford, England, September 19-23, 2016.
 94. *M. Hiller, M. Bellamy, K. Eckerman, T. Miller and N. Hertel, Reduced Variance using ADVANTAG in Monte Carlo Calculations of Dose Coefficients to Stylized- and Voxel Phantoms, 13th International Conference on Radiation Shielding, Paris, France, October 3-6, 2016.
 95. *K. G. Veinot, K. F. Eckerman, M. Hiller, T. Miller and N. E. Hertel, Organ and Effective Dose Coefficients for Cranial and Caudal Irradiation Geometries: Neutrons, 13th International Conference on Radiation Shielding, Paris, France, October 3-6, 2016.
 96. *Nolan Hertel and Eric Burgett. Unfolding Large Plastic Scintillator Pulse-Height Data, 2016 IEEE Nuclear Science Symposium and Medical Imaging Conference, Strasbourg, France, October 29-November 6, 2016.
 97. *N. E. Hertel, K. F. Eckerman, S. Dewji, and M. Hiller, Radiological Toolbox 3.0.0, Health Physics Society Midyear Symposium, 2017.
 98. ***C. E. Samuels**, N. E. Hertel, and A. J. Ansari, Screening Criteria for External Contamination in a Radiation Emergency, Health Physics Society Annual Meeting, 2017.
 99. *N.E. Hertel, A. Singletary, J. Saunders, T. Gates, A. Tee, and P. Burke, Adjustment Of An AmBe Source To Simulate A Cf-252 Source Spectrum, Neutron and Ion Dosimetry Symposium NEUDOS-13, Krakow, Poland, May 13-17, 2017.
 100. *Nolan E. Hertel, Kenneth G. Veinot and Keith Eckerman, Neutron Dosemeters and the Angular Dependence of Effective Dose, Neutron and Ion Dosimetry Symposium NEUDOS-13, Krakow, Poland, May 13-17, 2017.

101. *S. Dewji, M. Hiller, N. Hertel, Comparison of Neutron Organ Doses for PIMAL Stylized Phantom in Upright and Bent Positions for Standard Irradiation Geometries, Neutron and Ion Dosimetry Symposium NEUDOS-13, Krakow, Poland, May 13-17, 2017.
102. N. Hertel, P. Bergstrom, M.M. Mille, and E. Dickson, Recent Updates of ANS/ANSI 6.1.1: Neutron and Gamma-Ray Flux-to-Dose-Rate Factors, Invited Paper, Special Session: ANS Standards Related to RPSD Applications: What are they and How DO They Impact You?, American Nuclear Society, 20th Topical Meeting of the Radiation Protection and Shielding Division Topical Meeting, Santa Fe, NM, August 2018.

D.4 SEMINARS

1. *Performance Assessment of the Texas Low-Level Radioactive Waste Disposal Facility*, University of New Mexico, April 9, 1991.
2. *Performance Assessment of a Low-Level Radioactive Waste Disposal Site*, Air Force Institute of Technology Distinguished Lecturer Series, September 30, 1992.
3. *Accident Scenarios for a Proposed Low-Level Radioactive Waste Disposal Site*, Argonne National Laboratory, Environmental Assessment Division, August 26, 1993.
4. **Dose Conversion Factors for External Dosimetry*, Frances Marion University, March 10, 1994.
5. **Health Physics Research at Georgia Tech*, North Georgia College Physics Department, November 9, 1994.
6. **Radiological Assessment of a Mixed Waste Incinerator*, Frances Marion University, April 15, 1997.
7. **Air-Scatter in the Vicinity of A Spent Fuel Dry Storage Facility*, North Carolina State University, February 2000.
8. **High-Energy Neutron Depth Dose Experiment*, University of Florida, January 2001.
9. **High-Energy Neutron Depth-Dose Experiment*, North Carolina State University, June 2001.
10. **High-Energy Neutron Depth-Dose Experiment*, Texas A&M University, March 2002.
11. **Numerical Simulation of Radiation Instrument and Dosimeter Response*, OECD/NEA Computing Radiation Dosimetry Workshop, Lisbon, Portugal, June 22, 2002.
12. **How to Manage Research Projects*, University of Metallurgy and Mining, Krakow, Poland, March 6, 2004.
13. **Development of a Boron Neutron Capture Enhanced Fast Neutron Therapy Beam*, Institute of Nuclear Physics, Krakow, Poland, March 8, 2004.
14. **Development of Boron Neutron Capture Enhanced Fast Neutron Therapy Beam*, The Maria Skłodowska-Curie Memorial Centre of Oncology, Warsaw, Poland., March 10, 2004.
15. **Development of Boron Neutron Capture Enhanced Fast Neutron Therapy Beam*. Heavy Ion Laboratory, University of Warsaw, Poland, March 11, 2004.
16. **Development of Boron Neutron Capture Enhanced Fast Neutron Therapy Beam*, Institute of Physics, University of Warsaw, Poland, March 11, 2004.
17. **Ethical Aspects of the Nuclear Energy*, Polish Nuclear Society Meeting, Warsaw University of Technology, Poland, March 12, 2004.
18. **High Temperature Gas Cooled Fast Reactor*, Institute of Atomic Energy, Swierk, Poland, March 2005.

19. **High-Energy Neutron Dosimetry*, International Sakharov Environmental University, Minsk, Belarus, March 2005.
20. **Being a Professor in an American Research University*, Belarus State University. Minsk, Belarus, March 2005.
21. **The American Educational System*, Republican Institute of Higher Education, Minsk, Belarus, March 2005.
22. **Ethical Aspects of Nuclear Energy*, Faculty Workshop, Brest, Belarus, March 2005
23. **Activation Product Modeling for Research Reactor Decommissioning*, Warsaw University of Technology, Institute of Heat Engineering, Warsaw, Poland, May 8, 2006.
24. **HEU and Research Reactors*, Atomic Energy Institute, Swierk, Poland, May 9, 2006.
25. **HEU and Research Reactors*, Institute of Nuclear Physics, Polish Academy of Science, Krakow, Poland, May 10, 2006.
26. **Radiation Physics Research at Georgia Tech*, Texas A&M University, April 11, 2007.
27. **Radiation Physics Research at Georgia Tech*, Oak Ridge National Laboratory, July 19, 2007.
28. **Estimating Dose to Healthcare Professionals and Assaying Internal Contamination using Handheld Detectors and Medical Devices*, Savannah River Chapter of the Health Physics Society, February 11, 2008.
29. **Nuclear Power*, Sam Nunn Security Program Seminar, February 12, 2008.
30. **Estimating Dose to Healthcare Professionals and Assaying Internal Contamination using Handheld Detectors and Medical Devices*, Alabama Chapter of the Health Physics Society, March 7, 2008.
31. **A Primer on Nuclear Energy*, 2008 Summer Nonproliferation Institute: Preparing the Next Generation for Teaching, Research and Public Service in Nonproliferation Policy, Center for International Trade and Security, University of Georgia-Athens, August 11, 2008.
32. **Nuclear Power*, Construction Specifications Institute, November 2, 2008, Atlanta, GA.
33. **Fire: Computation of Dose*, Workshop on Radiation Transport Simulation Methodologies for Threat Reduction Applications, Los Alamos National Laboratory, November 18-19, 2008.
34. **Panel: What The Nuclear Renaissance Means for Today?*, 2008 Canberra Users' Group Meeting, Chateau Elan, Georgia, June 23-27, 2008.
35. *Nuclear Power*, Sam Nunn Security Program Seminar, January 27, 2009.
36. **Status of The Revision of ICRU Report 57 / ICRP Publication 74*, International Commission on Radiation Measurements and Units, Dresden, Germany, September 14, 2009.
37. **Comparisons of Reprocessing Technologies*, 2012 Workshop on Nuclear Energy and Fuel Cycle Activities: From Impasse to Opportunity for US-ROK Cooperation, October 7, 2012.
38. **Internal Doses to Hotel Housekeepers Due to I-131 Patients*, U. S. Nuclear Regulatory Commission Office of Nuclear Regulatory Research Seminar and Panel Discussion on "Studies of Dose to the General Public from Radiation Therapy Patients," Rockville, MD, November 6, 2014.
39. **Estimated External Doses to Members of the Public from Patients with ¹³¹I Treatment*, Georgia Tech NRE Seminar, March 26, 2015.
40. **Oak Ridge Update: Center for Radiation Protection Knowledge Activities*, Interagency Steering Committee on Radiation Standards, May 27, 2015.

41. *Member, *Iran Nuclear Panel*, September 9, 2015, sponsored by the Georgia Tech Center for International Strategy and Policy.
42. **Center for Radiation Protection Knowledge: Mission and Ongoing Activities*, Oak Ridge National Laboratory Nuclear Reactor and Systems Division Seminar, October 28, 2015.
43. **Center for Radiation Protection Knowledge: Mission and Ongoing Activities*, Pacific Northwest National Laboratory, July 22, 2016.
44. **Iodine-131 Patient Dose to Members of the Public*, University of New Mexico, Albuquerque, NM, September 13, 2017.
45. *Neutron Spectroscopy with Moderated Detectors*, McGill University, Montreal, Quebec, Canada, January 19, 2018.
46. *Neutron Spectroscopy with Moderated Detectors*, University of Illinois at Urbana-Champaign NPRES Department Special Seminar, March 7, 2018.
47. *Doses to Members of the Public from I-131 Patient Release*, Chinese Institute for Radiation Protection, Taiyuan, China, November 19, 2018.
48. *Activation Product Modeling for Research Reactor Decommissioning*, Chinese Institute for Radiation Protection, Taiyuan, China, November 19, 2018.
49. *Decommissioning the Georgia Tech Research Reactor*, China Nuclear Power Engineering, Inc., Beijing, China, November 21, 2018.

D5. Other Presentations

1. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Rio Grande Chapter of the Health Physics Society, Albuquerque, NM, September 12, 2017.
2. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) New England Chapter of the Health Physics Society, Sturbridge, MA, September 26, 2017.
3. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour), Joint meeting of the New Jersey and Greater New York Chapters of the Health Physics Society, New York, NY, October 10, 2017.
4. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Columbia Chapter of the Health Physics Society, Kennewick, WA, October 19, 2017.
5. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Northeast Ohio Chapter of the Health Physics Society, Cleveland, OH, October 18, 2017.
6. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) North Central Chapter of the Health Physics Society, ST. Paul. MN, October 20, 2017.
7. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) East Tennessee Chapter of the Health Physics Society, Oak Ridge, TN November 2, 2017.
8. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour), Cincinnati Radiation Society, Cincinnati, OH November 8, 2017.

9. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Baltimore-Washington Chapter of the Health Physics Society, Bethesda, MD, November 14, 2017.
10. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Hoosier Chapter of the Health Physics Society, Indianapolis, IN, January 25, 2018.
11. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Atlanta Chapter of the Health Physics Society, Atlanta, GA, February 1, 2018.
12. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Savannah River Chapter of the Health Physics Society, Aiken, SC, February 15, 2018.
13. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Arkansas Chapter of the Health Physics Society, Little Rock, AK, February 22, 2018.
14. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Deep South Chapter of the Health Physics Society, Baton Rouge, LA, February 23, 2018.
15. **Radiation Protection: What we know, don't know and need to know?*, North Carolina State University Student Section of the American Nuclear Society, Raleigh, NC, March 1, 2018.
16. **Neutron Spectroscopy with Moderated Detectors*, (HPS President-Elect Chapter tour) North Carolina Chapter of the Health Physics Society, Raleigh, NC, March 2, 2018.
17. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Midwest Chapter of the Health Physics Society, Westmont, IL, March 6, 2018.
18. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Northern California Chapter of the Health Physics Society, Oakland, CA, March 15, 2018.
19. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Western New York Chapter of the Health Physics Society, Rochester, NY, March 22, 2018.
20. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Northeast New York Chapter of the Health Physics Society, Albany, NY, March 23, 2018.
21. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Alabama Chapter of the Health Physics Society, Huntsville, AL, March 31, 2018.
22. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) 50th Anniversary of the Florida Chapter of the Health Physics Society, Tallahassee, FL, April 6, 2018.
23. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Central Rocky Mountain Chapter of the Health Physics Society, Boulder, CO, April 19, 2018.
24. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Joint Meeting of the Eastern Idaho Chapter and the Salt Lake City Chapter of the Health Physics Society, Pocatello, ID, April 21, 2018.
25. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Virginia Chapter of the Health Physics Society, Charlottesville, VA, April 27, 2018.

26. **Radiation Protection: What we know, don't know and need to know?* (HPS President-Elect Chapter tour) Cascade Chapter of the Health Physics Society E Dale Trout Symposium, Portland, OR, May 4, 2018.
27. **Doses to Members of the Public from I-131 Patient Release* (HPS President-Elect Chapter tour) Delaware Valley Chapter of the Health Physics Society, Morgantown, PA, May 18, 2018.

E. GRANTS AND CONTRACTS

E1. AS PRINCIPAL INVESTIGATOR

The University of Texas at Austin

Title of Project: Development of Measurement Capabilities for Integral Testing of Nuclear Data

Agency/Company: Bureau of Engineering Research

Total Dollar Amount: \$3,000

Period of Performance: 9/79 - 9/80

Title of Project: Upgrade of NE-213 Spectrometry System

Agency/Company: University of Texas Equipment Grant

Total Dollar Amount: \$15,130

Period of Performance: 9/79 - 9/80

Title of Project: High-Energy Neutron Transport Studies

Agency/Company: National Science Foundation

Total Dollar Amount: \$39,975

Period of Performance: 5/80 - 10/82

Title of Project: Construction and Calibration of an Associated Particle System to Monitor a DT Neutron Source

Agency/Company: University Of Texas Research Institute

Total Dollar Amount: \$4,354

Period of Performance: 4/82 - 9/82

Title of Project: Investigation of Nuclear Data for Well Logging

Agency/Company: Sun Oil Special Summer Research Grant

Total Dollar Amount: \$6,500

Period of Performance: 6/82 - 9/82

Title of Project: Neutron Multiplication by Beryllium

Agency/Company: Texas Atomic Energy Research Foundation

Total Dollar Amount: 5,000

Period of Performance: 6/82 - 9/82

Title of Project: Nuclear Engineering Teaching Laboratory: Undergraduate Laboratory Stations

Agency/Company: University of Texas Equipment Grant

Total Dollar Amount: \$41,000

Period of Performance: 9/82 - 9/83

Title of Project: Neutron Generator Upgrade

Agency/Company: University of Texas

Total Dollar Amount: \$7,000

Period of Performance: 9/82 - 9/83

Title of Project: Fusion Neutronics Equipment

Agency/Company: University of Texas

Total Dollar Amount: \$20,000

Period of Performance: 9/82 - 9/83

Title of Project: Development of Fusion Blanket Neutronics Program

Agency/Company: Texas Atomic Energy Research Foundation

Total Dollar Amount: \$7,000

Period of Performance: 6/83 - 9/83

Title of Project: Calibration of Neutron Counting Equipment for Beryllium Multiplication Experiment

Agency/Company: Texas Atomic Energy Research Foundation

Total Dollar Amount: \$9,044

Period of Performance: 9/83 - 1/85

Title of Project: An Evaluation of Methods of Low-Level Radioactive Waste Disposal

Agency/Company: Texas Low-Level Radioactive Waste Disposal Authority

Total Dollar Amount: \$9,736

Period of Performance: 9/84 - 6/85

Title of Project: Neutron Multiplication by Beryllium

Agency/Company: National Science Foundation

Total Dollar Amount: \$139,557

Period of Performance: 1/85 - 12/87

Title of Project: Energy Spectral Measurements of Clinical Fast Neutron Beams: NE-213 Measurements

Agency/Company: University of Rochester Strong Memorial Hospital (PHS Consortium)

Total Dollar Amount: \$13,720

Period of Performance: 5/85 - 5/86

Title of Project: Implementation of Bonner Sphere Unfolding Codes on an IBM PC

Agency/Company: PROJECT QUEST/IBM

Total Dollar Amount: \$6,300

Period of Performance: 1/85 - 4/86

Title of Project: Microcomputer Shielding and Radiation Software Package

Agency/Company: Grove Engineering

Total Dollar Amount: \$2,000

Period of Performance: 12/86

Title of Project: BRC Radwaste Stream Computer Modeling

Agency/Company: Texas Low-Level Radioactive Waste Disposal Authority

Total Dollar Amount: \$9,745

Period of Performance: 6/87 - 8/87

Title of Project: Performance Assessment and Monitoring of the Ambient Radiation Levels for a Prospective Low-Level Radioactive Waste Disposal Site

Agency/Company: Texas Low-Level Radioactive Waste Disposal Authority

Total Dollar Amount: \$194,035

Collaborators: Randall Charbeneau (Co-PI)

Period of Performance: 9/89 - 8/90

Dr. Hertel's Share: 50%

Title of Project: Performance Assessment and Monitoring of the Ambient Radiation Levels for a Prospective Low-Level Radioactive Waste Disposal Site
Agency/Company: Texas Low-Level Radio-active Waste Disposal Authority
Total Dollar Amount: \$80,464
Collaborators: Randall Charbeneau (Co-PI)
Period of Performance: 9/90 - 8/91
Dr. Hertel's Share: 50% (\$K)

Title of Project: PET Cyclotron Vault Neutron Shield Analysis
Agency/Company: University of Texas Health Science Center at San Antonio
Total Dollar Amount: \$5,114
Period of Performance: 4/92 - 8/92

Title of Project: Performance Assessment and Monitoring of the Ambient Radiation Levels for a Prospective Low-Level Radioactive Waste Disposal Site
Agency/Company: Texas Low-Level Radioactive Waste Disposal Authority
Total Dollar Amount: \$107,216
Collaborators: Randall Charbeneau (Co-PI)
Period of Performance: 9/92 - 8/93
Dr. Hertel's Share: 50%

Georgia Institute of Technology

Title of Project: Consolidated Incineration Facility Health Risk Assessment
Agency/Company: ERDA/Westinghouse Savannah River Company
Total Dollar Amount: \$278,618
Collaborators: Jim Mulholland (co-PI)
Period of Performance: 2/94 - 9/30/95
Dr. Hertel's Share: ~65% (\$178K)

Title of Project: Benchmarking the LAHET Elastic Scattering Model for APT Design Applications
Agency/Company: ERDA, Westinghouse Savannah River Company
Total Dollar Amount: \$30,674
Period of Performance: 7/96 - 5/97

Title of Project: Creation of a Set of Benchmark Experiments to Validate the LAHET Code
Agency/Company: Accelerator Production of Tritium Southeast Consortium
Total Dollar Amount: \$107,104
Collaborators: Farzad Rahnema (Co-PI)
Period of Performance: 9/97 - 8/98
Dr. Hertel's Share: ~50% (54K)

Title of Project: Radiation Dosimetry for the APT
Agency/Company: Accelerator Production of Tritium Southeast Consortium
Total Dollar Amount: \$50,090
Role: PI
Collaborators: Chris Wang (Co-PI)
Period of Performance: 9/97 - 8/98
Dr. Hertel's Share: 50% (\$25K) assumed

Title of Project: High-Energy Radiation Dosimetry and Code Benchmarking
Agency/Company: Los Alamos National Laboratory
Total Dollar Amount: \$176,554
Collaborators: Chris Wang (Co-PI) and Farzad Rahnema (Co-PI)
Period of Performance: 1/99 - 1/00
Dr. Hertel's Share: Do not remember the split.

Agency/Company: Los Alamos National Laboratory
Total Dollar Amount: \$149,914
Collaborators: F. Rahnema (Co-PI)
Period of Performance: 1/00 - 9/00
Dr. Hertel's Share: Do not remember the split.

Title of Project: Laser Illuminated Track Etch Scattering (LITES) Dosimetry System
Agency/Company: Los Alamos National Laboratory
Total Dollar Amount: \$24,297
Role: PI
Period of Performance: 12/00–9/01

Title of Project: Boron Neutron Capture Enhanced Fast Neutron Therapy Facility
Agency/Company: FERMILAB
Total Dollar Amount: \$24,769
Period of Performance: 4/01 – 3/02

Title of Project: Cobalt-60 Irradiations at Neely Nuclear Research Center
Agency/Company: Various Sponsors
Total Dollar Amount: \$1,121,450
Period of Performance: 1/98 – 6/06

Title of Project: Experimental Verification of a Conceptual Boron Neutron Capture Enhanced Fast Neutron Radiotherapy Facility
Agency/Company: FERMILAB
Total Dollar Amount: \$25,674
Period of Performance: 10/02–9/03

Title of Project: Intraoperative Imaging of Sentinel Lymph Nodes, Co-PI with Carmen Greene
Agency/Company: U. S. Army Medical Research and Material Command
Total Dollar Amount: \$66,000
Collaborators: Carmen Greene (student is considered a co-PI by the program)
Period of Performance: 8/02 – 7/05
Dr. Hertel's Share: 100%

Title of Project: Dose Conversion Factor Development
Agency/Company: Los Alamos National Laboratory
Total Dollar Amount: \$14,750
Period of Performance: 10/02–9/03

Title of Project: Characterizations of University Research Reactor Irradiation Facilities
Agency/Company: Department of Energy through Southeast University Consortium
Total Dollar Amount: \$174,169
Collaborators: Chris Wang (Co-PI)
Period of Performance: 9/03-9/05
Dr. Hertel's Share: ~65% (\$110K)

Title of Project: Synthesis and Analysis of Nanoparticle Composites for Radiation Shielding
Agency/Company: University of Kentucky (Prime NASA)
Total Dollar Amount: \$99,905
Period of Performance: 1/04-8/07

Title of Project: Simulating Radiation Detection Instruments in Hospitals for Use as Whole Body Counters Following RDD Events
Agency/Company: CDC Radiation Studies Branch
Total Dollar Amount: \$24,527
Period of Performance: 9/04-8/05

Title of Project: Dosimetry of Radioactive Seeds for Implants
Agency/Company: IBt Corporation
Total Dollar Amount: \$18,153
Period of Performance: 7/04-2/05

Title of Project: Minor Actinide Doppler Coefficient Measurement Assessment
Agency/Company: DOE Advanced Nuclear Research at Universities
Total Dollar Amount: \$116,035
Period of Performance: 4/05-3/07

Title of Project: Simulation and Testing of Various Radiation Survey Meters as Monitors of Internal Contamination Levels
Agency/Company: CDC Radiation Studies Branch
Total Dollar Amount: \$90,000
Period of Performance: 8/05-8/06

Title of Project: Characterizations of University Research Reactor Irradiation Facilities, Co-PI/PD with Chris Wang.
Agency/Company: Multi-University Southeast INIE Consortium MUSIC (Prime DOE)
Total Dollar Amount: \$118,439
Collaborators: Chris Wang (co-PI)
Period of Performance: 9/05–9/06
Dr. Hertel's Share: ~60% (\$72K)

Title of Project: Characterizations of University Research Reactor Irradiation Facilities
Agency/Company: Multi-University Southeast INIE Consortium MUSIC (Prime DOE)
Total Dollar Amount: \$40,000
Period of Performance: 9/06-9/07

Title of Project: Moderating Detector Measurements of Neutron Spectra
Agency/Company: Big 10 Minigrant (Prime Contractor DOE)
Total Dollar Amount: \$24,900
Period of Performance: 9/06-8/07

Title of Project: Neutron Dosimetry Measurements in Plant Farley Dry Cask Storage Area
Agency/Company: Alabama Power & Light (Southern Nuclear Company)
Total Dollar Amount: \$20,000
Period of Performance: 7/06-9/06

Title of Project: Simulation and Testing of Various Radiation Survey Meters as Monitors of Internal Contamination Levels

Agency/Company: TKCIS (Prime Contractor CDC)

Total Dollar Amount: \$127,700

Period of Performance: 9/06-5/08

Title of Project: Simulation and Testing of Hospital Thyroid Probes for Assessing Internal Radiation Contamination

Agency/Company: TKCIS (Prime Contractor CDC)

Total Dollar Amount: \$99,757

Period of Performance: 3/07-5/08

Title of Project: Georgia Tech Radiological Engineering Course Development

Agency/Company: U. S. Nuclear Regulatory Commission

Total Dollar Amount: \$189,553

Collaborators: Bernd Kahn (co-PI) and Robert Rosson (Co-PI)

Period of Performance: 9/07-8/08

Dr. Hertel's Share: ~40% (\$75K)

Title of Project: An Innovative Approach to Precision Fission Measurements Using A Time Projection Chamber

Agency/Company: DOE Nuclear Energy Research Initiative Consortium

Total Dollar Amount: \$2,999,917

Collaborators: Six University Consortium with Georgia Tech as the Lead

Period of Performance: 10/07-9/10

Dr. Hertel's Share: ~40% (\$1200K)

Title of Project: Testing Of Nanoparticle Shielding Material In The Penn State Research Reactor Neutron Transmission Beamline

Agency/Company: Big10 Minigrant Program (Prime Contractor DOE)

Total Dollar Amount: \$24,232

Period of Performance: 10/07-9/08

Title of Project: Neutron Spectrum Determination In The Ohio State Research Reactor Irradiation Facility

Agency/Company: Big10 Minigrant Program (Prime Contractor DOE)

Total Dollar Amount: \$24,796

Collaborators: Dwayne Blaylock (co-PI)

Period of Performance: 10/07-9/08

Dr. Hertel's Share: ~50% (\$12K)

Title of Project: Analysis and Modeling of the Spallation Product Inventory Mercury from the SNS Target System

Agency/Company: Spallation Neutron Source Facility (ORNL)

Total Dollar Amount: \$156,249

Period of Performance: 2/08-12/10

Title of Project: Georgia Tech Radiological Engineering Course Development (2nd Year Renewal)

Agency/Company: U. S. Nuclear Regulatory Commission

Total Dollar Amount: \$149,690

Collaborators: Bernd Kahn (co-PI) and Robert Rosson (Co-PI)

Period of Performance: 9/08-8/10

Dr. Hertel's Share: ~40% (\$60K)

Title of Project: Investigation of the Response of a Capintec 3000 Thyroid Uptake Probe and Handheld Pancake Probe to the Ingestion Pathway for Radioactive Material

Agency/Company: TKCIS (Prime Contractor CDC)

Total Dollar Amount: \$82,780

Period of Performance: 9/08-4/09

Title of Project: Use of Portal Monitors to Assess Internal Contamination Levels after an RDD Event

Agency/Company: TKCIS (Prime Contractor CDC)

Total Dollar Amount: \$117,669

Period of Performance: 9/08 – 8/09

Title of Project: Pioneer Research in Nuclear Detection

Agency/Company: Georgia Tech Focused Research Program

Total Dollar Amount: \$60,000

Collaborators: Ian Ferguson (co-PI)

Period of Performance: 7/07-8/09

Dr. Hertel's Share: ~80% (\$48K)

Title of Project: Dosimetry For Standoff Active Interrogation

Agency/Company: Idaho National Laboratory

Total Dollar Amount: \$29,961

Period of Performance: 5/8-6/09

Title of Project: Development of Nuclear Safeguards Component in the Nuclear & Radiological Engineering Curriculum at Georgia Tech

Agency/Company: Oak Ridge National Laboratory (Prime NNSA)

Total Dollar Amount: \$110,012

Period of Performance: 9/09-12/31/2013

Title of Project: Assessing Internal Contamination Levels for Fission Product Inhalation

Agency/Company: TKCIS Global (Prime CDC, Radiation Studies Branch)

Total Dollar Amount: \$188,333

Period of Performance: 10/09-9/10

Title of Project: Ultrafast Large Area ZnO Thermal Neutron Scintillators for a Near Term Replacement of ³He

Agency/Company: DOE NNSA NA-22

Total Dollar Amount: \$850,000

Collaborators: Christopher Summers (co-PI), Benjamin Klein (co-PI), Eric Burgett (co-PI)

Period of Performance: 8/1/10-1/15/14

Dr. Hertel's Share: ~40% (\$340K)

Title of Project: Neutron Dose Measurements in the Vicinity of Spent Fuel Transfer Cask and In Containment

Agency/Company: Dominion Kewaunee Nuclear Power Plant

Total Dollar Amount: \$50,162

Period of Performance: 6/10/10-12/31/11

Title of Project: Characterizing And Evaluating The Response Of Various Portal Monitors When Used to Assess Internal Contamination

Agency/Company: ORISE/ORAU (Prime CDC, Radiation Studies Branch+)

Total Dollar Amount: \$94,965

Period of Performance: 10/01/10-9/30/11

Title of Project: Neutron Radiation Measurements

Agency/Company: Wastren Advantage Inc. (TRU Waste Processing Center)

Total Dollar Amount: \$29,969

Period of Performance: 8/03/11-7/25/12

Title of Project: Educating the Next Generation on International Verification and Monitoring for Nuclear Nonproliferation

Agency/Company: GT Global Fire (Georgia Tech)

Collaborators: Adam Stulberg (co-PI)

Period of Performance: 7/1/12-6/30/14

Dr. Hertel's Share: ~5% (\$1.5K)

Title of Project: Dosimetry Simulations in Support of Dose Base Cleanup Concentrations (GO! Program, Lauren Finklea)

Agency/Company: Environmental Sciences Division, Oak Ridge National Laboratory (Prime EPA)

Total Dollar Amount: \$43,355

Period of Performance: 10/14/2014-5/31/2015

Title of Project: NGSF Safeguards Course in Conjunction with SRNL

Agency/Company: Savannah River National Laboratory (Prime NNSA)

Total Dollar Amount: \$3500

Period of Performance: 1/2015-5/31/2015

Title of Project: Hybrid K-Edge Densitometer (HKED) Development

Agency/Company: Oak Ridge National Laboratory (USDOE/NNSA PRIME)

Total Dollar Amount: \$238,538

Period of Performance: 8/1/2013-8/31/2016

Title of Project: Joint Faculty Appointment, Center for Radiation Protection Knowledge

Agency/Company: Environmental Sciences Division, Oak Ridge National Laboratory

Total Dollar Amount: \$430,826

Period of Performance: 8/29/2013-present

Title of Project: Consortium for Nonproliferation Enabling Capabilities

Agency/Company: North Carolina State University CNEC Consortium (Prime NNSA)

Total Dollar Amount: \$1,786,999 (additional \$300k added to last two years)

Collaborators: Bernard Kippelen (co-PI)

Period of Performance: 10/1/2014-9/20/19

Dr. Hertel's Share: ~60% (1.05M\$)

Title of Project: Characterization of Fallout for Emergency Response

Agency/Company: Oak Ridge National Laboratory (Prime CDC)

Total Dollar Amount: \$85,308

Period of Performance: 8/21/18 – 9/29/19

E2. As Co-Principal Investigator

Title of Project: Nuclear Technology Study of the Fusion Ignition Experiment IGNITEX

Agency/Company: Texas Advanced Technology Program

Total Dollar Amount: \$344,110

Collaborators: G.A. Hallock (Co-PI) and R. Carrera (PI)

Period of Performance: 6/88 - 5/90

Dr. Hertel's Share: 33% (\$114K)

Title of Project: Performance Assessment and Monitoring of the Ambient Radiation Levels for a Prospective Low-Level Radioactive Waste Disposal Site

Agency/Company: Texas Low-Level Radioactive Waste Disposal Authority

Total Dollar Amount: \$121,539

Collaborators: Randall Charbeneau (PI)

Period of Performance: 9/89 - 8/90

Dr. Hertel's Share: 50% (\$60,765)

Title of Project: Performance Assessment and Monitoring of the Ambient Radiation Levels for a Prospective Low-Level Radioactive Waste Disposal Site

Agency/Company: Texas Low-Level Radio-active Waste Disposal Authority

Total Dollar Amount: \$124,766

Collaborators: Randall Charbeneau (PI)

Period of Performance: 9/91 - 8/92

Dr. Hertel's Share: 50% (\$K)

Title of Project: Investigation of Secondary Neutron Dose Equivalent from Linear Accelerator Multileaf Collimator Configurations,

Agency/Company: Georgia Tech – Emory Fund for Innovative Cancer Technologies

Total Dollar Amount: \$50,000:

Collaborators: Rebecca Howell of Emory University (PI)

Period of Performance: 5/05-4/06

Dr. Hertel's Share: ~50% (\$25K)

Title of Project: Exploring Future-Oriented Partnership between ROK and US in Nuclear Energy and Fuel Cycle Development

Agency/Company: Korea Foundation

Total Dollar Amount: \$60,000

Collaborators: Adam Stulberg, INTA (PI)

Period of Performance: 7/1/12-12/31/12

Dr. Hertel's Share: ~0% (\$0K)

Title of Project: Exploring Future-Oriented Partnership between ROK and US in Nuclear Energy and Fuel Cycle Development, Year 2

Agency/Company: Korea Foundation

Total Dollar Amount: \$30,000

Collaborators: Adam Stulberg, INTA (PI)

Period of Performance: 2/1/13–12/31/13

Dr. Hertel's Share: ~5% (\$1.5K)

Title of Project: Oxygen Doped ZnTe Single Crystals For Gamma-Ray Spectroscopy

Agency/Company: KROMEK (UK)

Total Dollar Amount: \$449,000

Collaborators: Christopher Summers (PI) and Zhitao Kang (Co-PI)

Period of Performance: unknown start – 1/31/2015.

Dr. Hertel's Share: ~3%

Title of Project: Nuclear Engineering and Science Equipment for Strategic Fuels Analysis Research in the Nuclear and Radiological Engineering Program at the Georgia Institute of Technology

Agency/Company: DOE Nuclear Energy University Program Infrastructure Grant Program

Total Dollar Amount: \$250,000

Collaborators: Anna Erickson (PI)

Period of Performance: funded 2015 (no performance date since just equipment)

Dr. Hertel's Share: ~15%

Title of Project: Faculty Development Program For Nuclear Education And Research At The Georgia Institute Of Technology

Agency: Nuclear Regulatory Commission Nuclear Education Faculty Development Program

Total Dollar Amount Requested: \$419,881

Role: PI at Georgia Tech;

Collaborators: all funds to co-PI Dan Kotlyar (actually all funds go to him)

Period of Performance: funded May 2017, 3 years

Dr. Hertel's share: \$0, none for compensation, grant requires that a senior faculty member serve as mentor to junior faculty member covered by the grant.

Title of Project: Robust Spectroscopic Organic Scintillators For Detection Of Radioactive Materials

Agency/Company: Defense Threat Reduction Agency, DOD

Total Dollar Amount: \$1,050,000

Collaborators: Bernard Kippelen, CEC (PI)

Period of Performance: 5/2018 – 5/2021

Dr. Hertel's Share: ~25%

E4. PENDING PROPOSALS

F. Other Scholarly and Creative Accomplishments

G. Societal and Policy Impacts

H. Other Professional Activities

Technical Education Research Center (<i>Teaching Module Preparation</i>)	1980
Scientific Measurement Systems, Inc. (<i>Neutron Applications in Industry</i>)	1982
Texas Low-Level Radioactive Waste Disposal Authority (<i>Review Technical Basis for the Texas Below Regulatory Concern Disposal Rule</i>)	1986 - 1987
Allied Signal Inc., Engineered Materials Sector (<i>Radiological Assessment of Contaminated Wood Pallet Burial</i>)	1989
Schaeffer Associates for Odetics Advanced Intelligent Machines Division (<i>Dosimetry Algorithm Development</i>)	1991 - 1993
Baker-Hughes Incorporated, TN Technologies (<i>Consultation on Doppler Flowmeter Use</i>)	1992

University of New Mexico (<i>Review of Radiation Transport Code Assessment</i>)	1994
B&W Nuclear Environmental Services Incorporated (<i>Radiological Assessment for the Demolition of the 232-F Stack at Savannah River Site</i>)	1995
IT Corporation (<i>Review of Health Risk Assessment</i>)	1996
Schaeffer Associates for CRC Research Institute of Japan (<i>First-Collision Transport Code Development</i>)	1997 - 1998
Pacific Northwest National Laboratory (<i>Computations in Support of the Chernobyl Neutron Monitoring System and Calibration</i>)	1997
Eastern Research Group, Inc. (ERG) (<i>Review of Toxicological Profile on Ionizing Radiation Review of Oak Ridge Uranium Release Dose Assessments</i>)	1999
NAC International (<i>SKYSHINE Code Development, Benchmarking, Shielding Analyses of Spent Fuel Dry Storage Containers, Storage Cask Activation</i>)	1996–2003
Southwest Research Institute (<i>Shielding Calculation Review, Radiotherapy Room Shielding Door Design</i>)	2000-2002
Washington Group International, Inc. (<i>Activation Calculations for Omega West Reactor Decommissioning</i>)	2002-2003
Duratek, Inc. (<i>Activation Calculations for Cornell Research Reactor Decommissioning</i>)	2003
Stanford University (<i>Analysis of the Radiological Status of the SLAC Linear Collider Tunnel</i>)	2002-2003
MJW Corporation (<i>Review of CDC/NIOSH Dose Reconstruction/Exposure Matrices, Dosimetry Computations</i>)	2003-2005
Lucas Engineering and Management Services, Inc. for Tetra Tech FW, Inc. (<i>Review of Radiation Detection Technology for Portal Monitors</i>)	2003-2004
MWH UK Limited (<i>Activation Calculations to Support the Decommissioning Plan for the Steam Generating Heavy Water Reactor, UKAEA Winfrith Site</i>)	2005-2006
CDC Radiation Studies Branch (<i>Review of Phase III Report of the Savannah River Site (SRS) Dose Reconstruction Project</i>)	2005
Southern Nuclear Operating Company (<i>Spent Fuel Gamma Scan System Evaluation</i>)	2005-2006
SCANTECH Holdings (<i>Shielding Study of the All Secure Cargo Container Scanner</i>)	2007-2008
Watson, Tate and Savoy Architects (<i>Shielding Analysis for Neutron Generator Room at the University of South Carolina</i>)	2006-2007
CH2M Hill (<i>Shielding, Dose Assessments, Spent Fuel Analyses, and Nonproliferation Assessments for GNEP Deployment</i>)	2007
Landauer, Inc. (<i>Neutron Sensitivity of the OSL Personal Dosemeter</i>)	2007
NAC International, Inc. (<i>Neutron Attenuation Measurements To Measure Boron Mass in Boral Samples</i>)	2009
EnergySolutions (<i>Activation Study of SEFOR to Support Its Decommissioning</i>)	2009-2010
ScanTech Sciences (<i>Shielding and Food Irradiator Support</i>)	2009-2010

EnergySolutions (<i>Activation Study of AEROTEST Radiography and Research Reactor to Support Its Decommissioning</i>)	2011
Capintec, Inc. (<i>Simulation of Ion Chamber Sensitivity to Radionuclides</i>)	2012-2014
Flir, Inc. (<i>Shielding Study of Test Stand for AmBe Source Use</i>)	2013
NAC International, Inc. (<i>Analysis of Variance Behavior as a Function of Distance for Skyshine Calculations</i>)	2013
Magnox Limited (<i>Activation Calculations to Support the Decommissioning Plan for the Steam Generating Heavy Water Reactor, UKAEA Winfrith Site, Update</i>)	2015-16
NIOSH Dose Reconstruction Project, ORAU Consultant on Neutron Dose Computations	2016-present
Phoenix Nuclear Labs, LLC, Consultant on Shielding Design of Neutron Generator Installation at Picatinny Arsenal Installation	2016-2017
Radiation Effects Research Foundation, Reanalysis of Atomic Bomb Survivors' Organ Doses	2018-2019

V. EDUCATION

A. COURSES TAUGHT (LAST 5 YEARS)

Semester, Year	Course Number	Course Title	Number of Students
Fall 2019	NRE 4328	Radiation Sources and Applications	21
Fall 2017	NRE 4328	Radiation Sources and Applications	35
Spring 2017	NRE 3316	Radiation Protection Engineering	35
Fall 2016	MP 6011, 6012, 8011 and 8012 NRE 8011 and 8012	MP and NRE Seminar Courses	28
Fall 2016	NRE 4328	Radiation Sources and Applications	25
Spring 2016	NRE 3316	Radiation Protection Engineering	26
Fall, 2015	NRE 4328	Radiation Sources and Applications	25
Spring, 2015	NRE 3316	Radiation Protection Engineering	28
Spring, 2015	NRE 4803	Nuclear Safeguards	21
Fall, 2014	NRE 4328	Radiation Sources and Applications	31
Spring, 2014	NRE 6759	Radiation Shielding and Monte Carlo Methods	3 (Video) 3 (on campus)
Spring, 2013	NRE 4803	Nuclear Safeguards	15
Spring, 2013	NRE 3316	Radiation Protection Engineering	58
Fall, 2012	NRE 4328	Radiation Sources and Applications	42

B. INDIVIDUAL STUDENT GUIDANCE

B1. Ph.D. Students

B.1.a Graduated

University of Texas at Austin

1. Yukitaka Kunimoto (UT). *A Core Inventory Model for Fuel Trajectory Analysis in Fusion-Fission Symbiotic Systems*, August 1983.
2. Richard S. Hartley (UT). *Neutron Multiplication by Beryllium*, December 1987.
3. George A. Miller, Jr., (UT). *Gadolinium Neutron Capture Therapy*, May 1992.
4. Bassel K. Nabelssi, (UT). *Calculations of Dose Equivalent Quantities for High-Energy Neutrons Using Homogeneous and Heterogeneous Phantoms*, May 1993. Medical Physicist, Department of Radiation Oncology, Greater Baltimore Medical Center.
5. Hector R. Vega-Carrillo (UT). *Neutron Field Characterization in the Vicinity of a PET Cyclotron*, May 1995. (Co-Advisor: Dr. Bernard W. Wehring) Professor and Academic Affairs Chairman, Universidad Autonoma de Zacatecas, Mexico.

Georgia Tech

6. Timothy H. Fox, *Computer Treatment Planning System and Optimization of Dose Distributions for a Patient Rotator Used in Stereotatic Radiosurgery*, Winter 1994. (Co-Advisor: Dr. K. J. Kearfott). Varian.
7. John L. Lobdell, *Dose Rate and Spectral Photon Measurements Around a Large BWR Using a Tissue-Equivalent Plastic Scintillation*, Fall 1995. Manager of Radiation Protection, Theragenics, Inc. (retired)
8. Karen Jones, *Biokinetic Model for Cs-137 in the Fetus*, Fall 1995. (Co-Advisor: Dr. Rod Ice).
9. Frederick J. Mis, *Development of an Imaging Camera for Nondestructive Examination*, Winter 1996. General Supervisor, Fleet Radiation Protection and Chemistry, Constellation Energy.
10. Mary Napolitano, *Mammographic X-ray Unit Peak Kilovoltage and Spectral Shape Determination Using Film Densitometry*, Spring 1997. (Co-Advisor: Dr. Jon Trueblood [MCG]). Medical Physicist.
11. Kenneth G. Veinot, *An Angular Dependent Neutron Effective Dose-Equivalent Dosimeter*, Fall 1999. Health Physicist, Y-12 Enrichment Plant, Oak Ridge, TN. Health Physicist.
12. Michele Sutton Ferenci, *High Energy Neutron Dosimetry*, Ph. D. Thesis, August 2001, Chair, Medical Physics, Hershey Medical Center, The Pennsylvania State University, Hershey, PA.
13. Heather Gepford, *Development and Implementation of a System for Reading Nuclear Etched Tracks in PADC (CR-39) Using Coherent Light Scatter*, Ph. D. Thesis, May 2002. Branch Chief, Nuclear Regulatory Commission, Region IV.
14. Jeremy Sweezy, *Development of A Boron Neutron Capture Enhanced Fast Neutron Therapy Beam* May 2002. Staff Scientist, X-5, Los Alamos National Laboratory.
15. R. Wayne Simpkins, *Neutron Organ Dose and the Influence of Adipose Tissue*, Ph. D. Thesis, December 2002. Health Physicist, TVA.
16. Karen Corzine Kelley, *Gd-148 and Other Spallation Production Cross Section Measurements for Accelerator Target Facilities*, May 2004. Staff Scientist, Los Alamos National Laboratory.
17. H. Omar Wooten, *Time-Dependent Neutron and Photon Dose Field Analysis*, Ph. D. Thesis, August 2005. Medical Physicist, Washington University, St. Louis, MO.
18. Rebecca Howell, *Investigation of Optimal Beam Energy for IMRT to Minimize Whole Body Dose Equivalent*, May 2005, Co-Advisor with Gary Fullerton., University of Texas Health Science

- Center – San Antonio. Associate Professor of Medical Physics, M. D. Anderson Hospital, University of Texas System Cancer Center.
19. Zhonglu Wang, *A Novel Design of a Boron Neutron Capture Enhanced Fast Neutron Therapy Facility*, Ph.D. Thesis, December 2006. Medical Physicist, Hershey Medical Center, The Pennsylvania State University, Hershey, PA.
 20. Michael C. Nichols, *Quantitative Basis for Component Factors of Gas Flow Proportional Counter Efficiencies*, December 2009 (co-Advisor with Bernd Kahn), Radiochemistry Consultant.
 21. Michael P. Shannon, *The Dosimetry of a Highly Collimated Bremsstrahlung Source in Air*, August 2009. Hopewell Designs, Inc.
 22. Kimberly Burns, *Coupled Multigroup Neutron-Photon Transport for the Simulation of High Resolution Gamma-Ray Spectroscopy Applications*, August 2009. Research Engineer, Pacific Northwest National Laboratory, Richland, WA.
 23. Eric A. Burgett, *Novel Neutron Detectors*, May 2010. Associate Professor in Nuclear Engineering, Idaho State University.
 24. Ryan Manger, *A Generic Biokinetic Model for C-14 Labelled Compounds*, August 2010. Medical Physics, Assistant Professor, San Diego.
 25. Michael Bellamy, *Relative Biological Effectiveness Of Low Energy Electrons And Photons By Monte Carlo Electron Transport Track Analysis*, May 2013. Staff Scientist, Oak Ridge National Laboratory, Center for Radiation Protection Knowledge.
 26. Shaheen Dewji, *Safeguards Assessment of Gamma-Ray Detection for Process Monitoring at Natural Uranium Conversion Facilities*, May 2014. Staff Scientist, Center for Radiation Protection Knowledge, Oak Ridge National Laboratory.
 27. G. Spencer Mickum, *Hybrid K-Edge Densitometer (HKED) Development*, December, 2015. Engineer, Hopewell Designs, Inc.
 28. Dwayne P. Blaylock, *Measurement and Predictions of Spallation Products at the Spallation Neutron Source*, May 2016. Engineer at Enercon.
 29. Taiee “Ted” Liang, *Characterization Of Ionizing Radiation Generated From High-Intensity Laser Interactions With Matter*, May 2017. Scientist at Stanford Linear Accelerator Center, Radiation Protection Staff.
 30. Peter Exline, *Optimization of Activation Foil Passive Neutron Detectors*, May 2019, U.S. Army, Fort Mead.

B.1.b In Process

1. John Stooksbury
 Advising Started: Fall 2014
 Qualifying Examination: Passed Fall 2015
 Thesis Proposal Presentation:
 Graduation Date: anticipated 12/2019
 Thesis Title: Integral Testing of Neutron Well Logging Cross Sections

2. Caleigh Samuels
 Advising Started: Spring 2018
 Qualifying Examination: Passed
 Thesis Proposal Presentation: March 2019
 Graduation Date: Expected 2020
 Thesis Title: IND Fallout Characterization and Related Doses to Victims
3. Keith Griffin
 Advising Started: admitted for Ph.D. January 2019
 Qualifying Examination: pending
 Thesis Proposal Presentation: pending
 Graduation Date: Expected 2020
 Thesis Title: Organ Doses to Atomic Bomb Survivors (very tentative)

B2. M.S. Students

B.2. Graduated with M.S. (all thesis⁺)

University of Texas at Austin

1. Yunitaka Kunimoto, began advising May, 1979 (UT), *Waste Stream Toxicities in Thorium Fuel Cycles for Pressurized Water Reactors*, M.S. Thesis, May 1980.
2. Steven J. Ganthner, began advising June 1979 (UT), *The Effects of Initial Enrichment in the Accelerator Breeding of Nuclear Reactor Fuel*, M.S. Thesis, August 1980. Nuclear Engineer, Carolina Power & Light.
3. William E. Murphie, began advising September 1979 (UT), *Measured Neutron and Gamma-Ray Spectra in a Tissue-Equivalent Liquid Irradiated with 14-MeV Neutrons*, M.S. Thesis, December 1980. Department of Energy, Manager of Portsmouth/Paducah Project Office.
4. Regina M. Laucius, began advising September 1981 (UT), *Calculation of the Differential Efficiencies of Organic Scintillators to Neutrons Above 10 MeV*, M.S. Thesis, May 1983.
5. Richard D. Savage, began advising September 1980 (UT), *Error Analysis For a Hydrogen Filled Benjamin Counter*, M.S. Thesis, December 1984.
6. Noreen D. Poor, began advising September 1983 (UT), *A Comparison of Low-Level Radioactive Waste Storage and Disposal Techniques*, M.S. Thesis, August 1985. Assistant Professor, College of Public Health, University of South Florida.
7. Maureen A. McGraw, began advising September 1988 (UT), *Exposure Assessment for Disposal of Low-Level Radioactive Soil*, M.S. Thesis, December 1989 (Civil Engineering Department, Environmental Engineering Program, Co-Advisor with Dr. R. J. Charbeneau). Research Scientist, Battelle Pacific Northwest National Laboratory.
8. Christine. G. Pollard (UT), *Analysis of the Biotic Pathways for a Texas Low-Level Radioactive Waste Disposal Facility*, M.S. Thesis, August 1990, Biological Sciences. Co-Advisor with Dr. C. McMillan. Health Physicist, Los Alamos National Laboratory. (retired)
9. Edward Takesuye (UT), *Photon Dose Equivalents in Phantoms*, M.S. Thesis, May 1991, Mechanical Engineering, Nuclear Engineering area. Officer, U.S. Navy (retired)

⁺ I did not keep records of the non-thesis students.

10. Arnold Preece (UT), *Use of the GENII Computer Code for Dosimetric Pathway Analysis of a Low-Level Radioactive Waste Disposal Facility*, M.S. Thesis, May 1993, Mechanical Engineering, Nuclear Engineering area. Engineer, Department of Energy, Idaho Operations Office.

Georgia Tech

11. H. Michelle Coward, *Health Risk Assessment of the Radioactive Emissions from the Consolidated Incineration Facility at the Savannah River Site*, M.S. H.P. Thesis, Winter 1995.
12. Edward A. Hoffman, *Analyses of Radioactive Waste Generation by Fusion Reactors*, M.S. N.E. Thesis, Summer 1995, Co-Advisor: W. M. Stacey. Staff Scientist, Argonne National Laboratory.
13. Ken Veinot, *Multisphere Neutron Spectra Measurements Near a High Energy Medical Accelerator*, M.S. Thesis, September 1996.
14. Jeremy Sweezy, *A Multisphere Neutron Spectrometer Measurement of the Georgia Tech Research Reactor Biomedical Facility*, M.S. Thesis, September 1996. Co-Advisor with Dr. Ratib Karam.
15. Tanya Oxenberg, *The Effectiveness of Catch Boxes in Testing Depleted Uranium Projectiles to Minimize the Impact to the Environment*, M.S. H.P. Thesis, September 1997. Health Physicist, Nuclear Regulatory Commission Office of Nuclear Regulatory Research.
16. Adam Nielsen, Began advising Fall 1996. *Dose Equivalent Operational Quantities for Neutrons from 20 MeV to 2 GeV*, M.S. Thesis, June 1998. Health Physics Inspector, Nuclear Regulatory Commission, Region II.
17. Mike Valenzano, began advising Fall 1996, *Neutron Measurements in the Vicinity of a Self-Shielded PET Cyclotron*, M.S. HP, December 1998.
18. Tracy Kiellman, began advising Fall 1997. *Health Risk Assessment for the Decommissioning of the Georgia Tech Research Reactor*, M.S. HP, December 1998. Health Physicist, Lawrence Livermore National Laboratory.
19. Emily Fort, began advising Fall 1996. *Historical Site Assessment of the Georgia Tech Research Reactor*, MS HP, March 1999.
20. Julia Banks, began advising Summer 1997. *Design of a ²⁵²Cf-Based Neutron Shielding Test Stand*, MS HP, June 1999.
21. Bryon Murray, *Determination of Lens of Eye Dose from Personal Monitoring Devices Worn at the Collar Level in Medical Institutes*, MS Thesis, May 2001.
22. Kathleen A. Foster, *Design of an Inlet Line Monitor System for the State of Illinois Gaseous Effluent Monitoring System (GEMS)* May 2002, Health Physicist, Illinois Department of Nuclear Safety
23. Jeffrey Tays, *Photoneutron Measurements in the Vicinity of a Varian 21 Ex Linear Accelerator*, May 2002. Medical Physicist, Cleveland Cancer Clinic.
24. H. Omar Wooten, *Internal Dose Conversion Factors for Spallation Products*, Spring 2002.
25. Michael P. Shannon, *An Illicit Nuclear Material Detection System Based on Photoneutron and Photofission Interactions*, M.S. Thesis, August 2003.

26. Ryan Lorio, *Feasibility of Determining Radioactivity in Lungs Using a Thyroid Uptake Counter*, M.S. Thesis, August, 2005. Staff Scientist, Los Alamos National Laboratory.
27. Jesson Hutchinson, *Handheld Gamma-Ray Spectrometry for Assaying Radioactive Materials in Lungs*, M.S. Thesis, December 2005. Staff Scientist, Los Alamos National Laboratory.
28. Carmen Greene, *Experience Using a Small Field of View Gamma Camera for Intraoperative Sentinel Lymph Node Procedures*, M. S. Thesis, May 2006. Health Physicist, Nuclear Regulatory Commission, Region II.
29. Zubair Abbissi, *Deconvolution of Gamma-Ray Spectra to Compensate for Chest Wall Thickness in Lung Counting*, M.S. Thesis, August 2006. Senior Medical Physicist, West Physics Consulting.
30. Sharon Chandler, *Comparison of Fuel Cycle Options*, M.S. Thesis, December 2006.
31. Ashby Bridges, *Estimating The Radiation Dose To Emergency Room Personnel In An Event Of A Radiological Dispersal Device Explosion*, M.S. Thesis, December 2006. Criticality Safety Officer, Bartlett Nuclear.
32. Ryan Bechtel, *Uranium-232 Beryllide Neutron Source*, M.S. Thesis, May 2007. Ph.D. Student at Temple University. Nuclear Engineer, U.S. DOE
33. Kimberly Burns, *Monte Carlo Simulations For Homeland Security Using Anthropomorphic Phantoms*, M. S. Thesis, May 2008. Research Scientist, at Pacific Northwest National Laboratory.
34. Sarah Scarboro, *The Use Of A Thyroid Uptake System For Assaying Internal Contamination Following A Radioactive Dispersal Event*, M. S. Thesis, May 2008. Medical Physicist.
35. Eric Burgett, *A Broad Spectrum Neutron Spectrometer Utilizing A High Energy Bonner Sphere Extension*, M. S. Thesis, May 2008. Associate Professor, Idaho State University.
36. Ryan Manger, *Assessing The Dose Received By The Victims Of A Radiological Dispersal Device With Geiger-Mueller Detectors*, M. S. Thesis, August 2008. Research Scientist, Oak Ridge National Laboratory.
37. Shaheen Dewji, *Use of NaI(Tl) Scintillation Detectors to Assay Internal Contamination Following a Radioactive Dispersion Event*, May 2009. Staff Scientist, Oak Ridge National Laboratory.
38. Amy Eastburg, *Use of a Military Issue GM Counter to Assay Internal Contamination*, May 2010. Instructor in Physics at U.S. Military Academy (West Point)
39. Randahl Palmer, *Use of Portal Monitors to Assay Internal Contamination Following a Radioactive Dispersion Event*, August 2010. Health Physicist Consultant
40. Emily Freibert, *Use of Portal Monitors to Assay Internal Contamination of Fission Products*, December 2010. Medical Physicist
41. Peter Exline, *Characterization of Modified Neutron Fields Created with AmBe and Cf-252 Sources*, August 2011. Lt. Colonel U.S. Army.
42. G. Spencer Mickum, MS NRE, *Development and Testing of an Organic Scintillator Detector for Fast Neutron Spectrometry*, May 2013.

43. Bixler Benson, *Large Area Moderated Neutron Detector System Optimization*, May 2015. Major U.S. Army
44. Lauren Finklea, *Geometric Correction Factors for Use in Shielding Calculations*, August 2015. Scientist CDC Radiation Studies Branch.
45. Keith Griffith, *Dose Computations for Boating Scenarios on Contaminated Lakes*, December 2016. Fellow at the National Cancer Institute.
46. Stephen Hardwick, *Alpha and Neutron Detection Using Zinc Oxide Nanorods Obtained from Low Temperature Hydrothermal Growth*, May 2017. Program Manager at the Defense Threat Reduction Agency.
47. Caleigh Samuel, *Screening Criteria Of Skin Contamination In A Radiological Emergency*, May 2018. PHD Student
48. Desiree Prince, *Gamma Ray Attenuation Of The M2/M3 Bradley Fighting Vehicle*, May 2018. Defense Threat Reduction Agency.
49. Jacob Inman, *Comparison Of Radiation Damage Effects In Organic And Silicon Photodetectors*, May 2019. PHD Student

B.2.b In Process with M.S.

50. John Stooksbury, *Neutron Measurements using Pulse Shape Discrimination*, anticipated?
51. Gregory Peacock, *Development of Improved Methods for Modeling Piped Fissile Material Holdup*, anticipated don't know as he is working and has not made much progress.

B3. Undergraduate Students (Special Problems and Undergraduate Research)

1. Rory J. Calhoun, Spring 1980 (UT), *The Variation of Unfolded Neutron Spectra with Detector Orientation*.
2. R. Cole Robinson, Spring 1981 (UT), *Calibration of a Neutron Survey Meter*.
3. Miguel Crespo-Jimenez, Summer 1981 (UT), *Experiments in Radiation Detection*.
4. Steven Wood, Fall 1983 (UT), *Calibration of a 7.62-cm Bonner Sphere*.
5. James Rush, Spring 1984 (UT), *Displaying Bonner Sphere Response Matrices*.
6. John Mercier, Alfred Zappala, Randall Manteufel, and Mark Sobotik, Fall 1984 (UT), *Nuclear Fuel Cycles*.
7. L. Bubolz, D. Harlander and W. Teng, Spring 1985 (UT), *Flow of Cement in Wellbore-casing Annulus* (Advisor, Senior Design Project).
8. Christine C. Chabai, Summer 1986 (UT), *Health Physics*.
9. Richard F. Bowen, Jr., and Thomas M. Perron, Fall 1986 (UT), *TLD Measurements in the Vicinity of TEXT*.
10. J. Fugate, E. Guttes and S. Ragsdill, Spring 1987 (UT), *Design of End Effectors and Market Survey of Commercially Available Cutting Tools to Perform Remote Radiological Source Recovery for the Explosive Ordinance Disposal Division of the United States Navy*, Advisor, Senior Design Project.

11. Scott A. Ragsdill, Spring 1987 (UT), *Calibration of Associated & Particle Detector System for a Texas Nuclear Neutron Generator*.
12. Wallace G. Lovely, Summer 1987 (UT), *VPI Nuclear Fuel Cycle Codes Implementation on the IBM-PC*.
13. Wallace G. Lovely, Summer 1988 (UT), *Transportation Worker Exposure from the Transport of BRC Radwaste in Roll-off Containers*.
14. David Goff, Brian J. Klir and Everett G. Rhoades, Fall 1988 (UT), *Angular Distribution of Neutrons From a DT Neutron Generator as Measured by Foil Activation Technique*.
15. David Goff, Fall 1988 (UT), *The TRIGA Control System: A Two-Phase Approach to Reactor Safety Analysis*.
16. James R. Jupena, Fall 1988 (UT), *Transportation Worker Exposure from the Transport of BRC Radwaste in Roll-off Containers*.
17. James R. Jupena, Spring 1989 (UT), *Proposed Mounting Device and Experiment Table for the University of Texas Neutron Generator*.
18. James R. Jupena, Summer 1989 (UT), *The Detection of ^{252}Cf Neutrons*.
19. David A. Adams, Harold D. Barton and Jeffrey L. Sines, Fall 1989 (UT), *Repair of the Nuclear Engineering Teaching Laboratory's Neutron Generator*.
20. David A. Adams and Harold S. Barton, Spring 1990 (UT), *Design and Modeling of a Beta Detector*.
21. David Adams, William Murphy, and Eddie Wong, Summer 1990 (UT), *Design of a Rugged, Portable Beta-Gamma Survey Instrument Capable of Accurately Measuring Skin Dose Rate Due to Beta Radiation*, Winner 1990 American Nuclear Society Undergraduate Student Design Contest. (Advisor, Senior Design Project).
22. Jon Rosenthal, Angel Sustaeta and Bryan Weikel, Spring 1991 (UT), *Conceptual Design of a Product Rearranging Mechanism for Use in a Gamma Radiation Sterilization Process and Considerations for the Incorporation of an On-Site Sterilization Facility for Intermedic Orthopedics, Inc.* (Advisor, Senior Design Project).
23. Joseph Weisman, *Design of Cf-252 Shield and Neutron Source Placement Device*, Spring 1994.
24. Katherine Norton, Shane Klima, Chris Comfort, *Radiological Impact of Using Flyash as a Concrete Additive*, Winter 1996.
25. Steve McGaffic, *Spreadsheet Development for Skyshine Calculations*, Summer 1996.
26. David Vaughn and Andrew Cook, *Design, Construction and Characterization of a WEP Neutron Howitzer*, Summer 1999.
27. David Vaughn and Jeremiah Sauber, *Calibration of the LB6411 Neutron Probe*, Spring 2000.
28. John Williams, *Measurement of the Low Energy Portion of a Neutron Spectrum for Dosimetry Purposes*, Summer 2002.
29. Jesson Hutchinson and William Casino, *Application of the MCNP Radiation Transport Code*, Summer 2003.
30. Ashley Manzoor, *Application of the MCNP Radiation Transport Code*, Spring 2004.

31. Christine Noelke, *The Use of Large Plastic Scintillators in the Detection of Radioactive Contraband*, Summer 2004.
32. Eric Burgett, *Gas-Cooled Fast Reactor Modeling*, Spring 2005.
33. Sherard Chiu, *Radionuclide Concentrations in Organs After Inhalation of Radioactive Materials from an RDD*, Fall 2005.
34. Ashby Bridges, *Scenarios for Estimating the Radiation Doses to Trauma Room Personnel Providing Care for Victims of a Nuclear or Radiological Incident*, Fall 2005.
35. Jessica Gibson (INTA student), *Nuclear Power: Principles, Practices, and Prospects*, Fall 2006.
36. Brian Hales, *The Use of Thermoluminescent Dosimeters to Determine Dose in High Energy Photon Fields*, Spring 2009.
37. Joshua Andrews, *Shielding Study of a 10 MV Electron Accelerator Facility*, Spring 2011.
38. Taiee Liang, *Neutron Detection*, Spring 2011.
39. Richard Meshell, *Study of the Cf-252 Spectrum with a Polyethylene Attenuator using Bonner Sphere Spectroscopy*, Fall 2011.
40. Matthew H. Williams, *Portal Monitor Setup and Testing*, Spring 2012.
41. Liz Dallas, *Radioanalytical Chemistry Detection Techniques*, Summer 2012.
42. Christopher McGahee, *Simulation of Neutron Detectors with MCNP Polimi*, Fall 2012.
43. Christopher McGahee, *Large Surface Area Moderated Neutron Detector*, Spring 2013.
44. Christina Hamm, *Isotope Identification for a Large Plastic Scintillator*, Spring 2013.
45. Angelo Spinetta, *Hydrothermal growth of ZnO Scintillators*, Summer 2013.
46. Alexander Eng, *Photoluminescence System Setup for Characterizing Scintillator Light Output*, Summer 2013.
47. Charles Leak, *TLD Reader Installation and Testing*, Summer 2013.
48. Christopher McGahee, *Neutron Detector Development*, Fall 2013.
49. Andrew Grice, *Characterization of the Georgia Tech Cs-137 Irradiator/Calibrator*, Fall 2013.
50. Jeff Bips, *Detector Calibration with Cf-252*, Fall 2013.
51. Christopher Safouri, *Application of Radioisotope Thermoelectric Generators in Ocean Surveying*, Fall 2013.
52. Christopher McGahee, *Characterization of the RSEL Vault*, Spring 2014.
53. Kelsi Austin, *Revision and Updating of Stanton's Code*, Fall 2014.
54. Boonuch, *Computation of Air Scatter Coefficients for Instrument Calibration*, Fall 2014.
55. Jessica Maddocks, *Computation of Air Scatter Coefficients for Instrument Calibration*, Fall 2014.
56. Keith Griffin, *Computation of Extremity Doses Using Calibration Phantoms*, Spring 2015.
57. Dustin Yang, *SONEX-P Neutron Interrogation System Testing*, Spring 2016.
58. Paul Burke, *Dosimetry of the Hiroshima Atomic Bomb Blast*, Spring 2017.

59. Daniel Vizoso, *Dosimetry of the Hiroshima Atomic Bomb Blast*, Spring 2017.

60. Ted Liang, *Characterization of Activated Pb Bricks from High Energy Electron Accelerators Facilities with FLUKA Simulations and Detector Measurements*, Spring 2017.

B4. Service on thesis or dissertation committees

The University of Texas at Austin

1. Ding-Kuo Hsu, M.S. Mechanical Engineering (Nuclear Option), December 1979.
2. F. Ann Patterson-Hine, M.S. Mechanical Engineering (Nuclear Option), May 1984.
3. Arthur C. Ratzel, Ph.D. Mechanical Engineering, December 1981.
4. Yueh Sam Yang, Ph.D. Mechanical Engineering (Nuclear), December 1981.
5. Thomas L. Sanders, Ph.D. Mechanical Engineering (Nuclear), May 1985.
6. Robert D. Smith, Ph.D. Mechanical Engineering (Nuclear), August 1987.
7. Frances A. Patterson-Hine, Ph.D. Mechanical Engineering (Nuclear), May 1988.
8. Arlen S. Heger, Ph.D. Mechanical Engineering (Nuclear), August 1989.
9. Matthew Becker, M.S. Civil Engineering, August 1990.
10. Zhigiang Tan, Ph.D. Mechanical Engineering, May 1991.
11. Heather J. Gepford, M.S. Mechanical Engineering (Nuclear Engineering), May 1991.
12. Robert S. Pope, M. S. Engineering Physics, Air Force Institute of Technology, December 1992.
13. Sean C. Miller, M. S. Engineering Physics, Air Force Institute of Technology, March 1993.

Georgia Institute of Technology

14. Sandra E. Burch, Ph.D. Nuclear Engineering (Health Physics), September 1993.
15. Ehsan Samei, M. S. Health Physics, September 1993.
16. Kenneth W. Brooks, Ph.D. Nuclear Engineering (Health Physics), September 1993.
17. Oscar J. Lessard, M.S. Engineering Physics, Air Force Institute of Technology, December 1993.
18. Jack W. Foster, M.S. Nuclear Engineering, December 1993.
19. Timothy J. Gillespie, M.S. Nuclear Engineering (Health Physics), May 1994.
20. John Zino, M.S. Nuclear Engineering (Health Physics), Fall 1994.
21. Wee-Kuan Lim, Ph.D. Nuclear Engineering (Health Physics), June 1995.
22. Michelle G. Pitts, M.S. Nuclear Engineering, Winter 1996.
23. Hannah E. Mitchell, Ph.D. Nuclear Engineering (Health Physics), Spring 1996.
24. Inhwan Yeo, Ph.D. Nuclear Engineering (Health Physics), Summer 1996.
25. Jameel A. A. Hefne, Ph.D. Nuclear Engineering, Summer 1996.
26. Horia-Nicolas Gheorghiu, Ph.D. Nuclear Engineering, Fall 1996.
27. D. Jay M. Jalandoni, Ph.D. Nuclear Engineering (Health Physics), Winter 1997.
28. Thomas M. Evans, Ph.D. Nuclear Engineering (Health Physics), Winter 1997.
29. Lung Kwang Pan, Ph.D. Nuclear Engineering (Health Physics), Winter 1997.
30. Eric S. Elder, Ph.D. Nuclear Engineering (Health Physics), Spring 1997.
31. Peter G. Newby, M.S. thesis, Spring 1997.
32. Dwayne Blaylock, M.S. thesis, Spring 1997.
33. Jeri L. Anderson, Ph.D. Nuclear Engineering (Health Physics), Summer 1997.
34. Eleodor M. Nichita, Ph. D. Nuclear Engineering, Fall 1997.
35. Jeffrey A. Favorite, Ph.D. Nuclear Engineering, Winter 1998.
36. Patricia L. Lee, Ph.D. Nuclear Engineering (Health Physics), Spring 1998.
37. Mike Nichols, Ph.D. in progress, Nuclear Engineering (Health Physics).
38. John Zino, Ph.D. Nuclear Engineering, 1999.
39. Ronnie Jeffcoat, MS Nuclear Engineering (Health Physics), 1999.

40. Michelle Pitts, Ph.D., 1999.
41. Erik Swanberg, MS Nuclear Engineering (Health Physics), May 2000.
42. Jodi Sulak, MS Nuclear Engineering (Health Physics), May 2000.
43. Danut Ilas, Ph.D., May 2000.
44. Carla White, MS Nuclear Engineering (Health Physics), December 2000.
45. Scott Mosher, Nuclear Engineering, May 2001.
46. Xuemei Wu, Ph. D., 2001
47. N. Jeff Griffis, MS Nuclear Engineering (Health Physics), Summer 2001.
48. A. E. Rocker, MS Nuclear Engineering (Health Physics), December 2001.
49. Germina Ilas, Ph.D., May 2002.
50. Wondwosen Mengesha, Ph. D. Dissertation, August 2002
51. Edward Hoffman, Ph. D., Summer 2002
52. Ji Chen, Ph.D., Fall 2002.
53. Murat Khamzin, Ph.D., Fall 2002
54. Jungqiang Li, Ph.D., 2003
55. Jason Hawkes, MS Thesis, Fall 2004.
56. Justin M. Pounders, MS Thesis, Fall 2006.
57. Desiree Jhanga, Ph.D. 2007.
58. Marat Siedeliev, Ph.D. Dissertation, Spring 2007.
59. Jose J. Marquez-Damian, MS Thesis, 2007.
60. Steve Keller, Ph.D. Dissertation, 2007.
61. Chih-Chieh Hu, Ph.D., 2008.
62. Kyungduck Cha, Ph.D. (ISYE), 2008.
63. Rob Kelm, MS NRE, 2009.
64. Jordan Rader, MS NRE 2009.
65. Jordan McKillop, MS NRE 2009.
66. Zachary Friis, Ph.D. NRE 2010.
67. Christopher Sommer, MS NRE 2010.
68. Hartmangruber, MS NRE 2010.
69. John Patrick Floyd II, MS NRE 2011.
70. Christopher M. Sommer, Ph.D. NRE 2011.
71. Jesse Coyle, M.S. NRE, 2012.
72. Timothy Flaspoebler, M.S. NRE, 2012.
73. Abiodun I. Adeniyi, M.S. NRE, 2013.
74. Troy England, Ph.D. ECE, 2014
75. Brantley H. Mills, Ph.D., ME/NRE, 2014
76. Tong Zhao, Ph.D., INTA, 2014.
77. David J. Koch, M.S., NRE, 2014.
78. Brian H. Lee, M.S., NRE, 2014.
79. Christopher Steward, Ph.D., NRE, 2016.
80. Allison M. Harbottle, M.S., Chemistry, 2016.
81. Timothy Flaspoebler, Ph.D. NRE, 2016 – in progress.
82. Paul Rose, Ph.D. NRE, 2017.
83. Joseph Burns, Ph.D NRE, 2017.
84. Abdalla Abou Jaoude, Ph.D NRE, 2017.
85. Giovanni Maronati, Ph.D. NRE, 2018.
86. Joseph Harms, Ph.D. NRE, 2018.
87. Greg Szalkowski, Ph.D. NRE, 2019

88. Serdar Charyyev, Ph.D. NRE, 2019.

B5. Mentorship of postdoctoral fellows or visiting scholars

1. Murat Kurudirek, Associate Professor of Physics, Department of Physics, Ataturk University, Erzurum/Turkey, (TUBITAK visiting Scientist – Worked on Neutron Measurements), 2013-2015.
2. Sinem Kurudirek, Ph.D. Candidate, Department of Physics, Ataturk University, Erzurum/Turkey, (TUBITAK visiting Scientist – Hydrothermal Growth of ZnO Scintillators for Radiation Detection – this became her Ph.D. Dissertation which she successfully defended in February 2015), 2013-2015.

C. EDUCATIONAL INNOVATIONS AND CONTRIBUTIONS

C3. Professional Development/Continuing Education

1. Taught "Electric Power and the Environment", (ME397) for High School Science Teachers, Lecture on "Uranium Mining, Milling, and Fuel Fabrication", Summers 1979 - 1987.
2. Taught selected topics, "Basic Radiological Health: An Intensive Course in the Principles", Texas Department of Public Health Bureau of Radiation Control, 1981.
3. Taught Review lecture, "Engineering-in-Training Fundamentals: Nucleonics and Wave Mechanics", University of Texas, 1982 - 1987
4. Taught selected topics and organized short course "Techniques in Nuclear Radiation Shield Analysis", June 1987, October 1988, September 1989, May 1990, July 1992, July 1993.
5. Taught selected topics and organized course "BRC Radwaste Disposal (Below Regulatory Concern)", February and November 1988, October 1989.
6. Taught lecture on "Atmospheric Dispersion" at the Performance Assessment Workshop, Host State Technical Coordinating Committee, November 29 - December 1, 1988, El Paso, Texas (Low-Level Radioactive Waste Disposal Compacts).
7. Lecture 62.3.7, "Treatment of Gaseous Waste", International Atomic Energy Agency (IAEA)/ANL/AECL Inter-regional Training Course on Management of Radioactive Waste from Nuclear Power Plants, Argonne National Laboratory, August, 1993.
8. Basic Health Physics Course, Westinghouse Savannah River Company, March - April, 1994.
9. Co-taught Health Physics Society Professional Enrichment Program Lecture (2-hour), "Air-Scattering of Radiation and Skyshine", June 2001, Summer HPS Meeting.
10. Faculty, International School of Radiation Damage and Protection 10th Course: Accelerator Radiation Protection, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Sicily. 2001
11. Co-taught course on Neutron Detection for TMS, Inc., San Diego, CA, September 2005.
12. Taught Health Physics Society Professional Enrichment Program Lecture (2-hour), "Neutron Spectroscopy," 2008 Midyear HPS Meeting: Radiation-Generating Devices, Oakland, CA.
13. Taught course on Neutron Detection for TMS, Inc., San Francisco, CA, June 2010.
14. Taught course on Neutron Detection for TMS, Inc to the Canadian Nuclear Safety Commission, Ottawa, Canada, October 5-8, 2010.
15. Taught one-hour Refresher Course on Neutron Detection at the 2010 IEEE NSS/MIC meeting, Knoxville, TN, November 2, 2010.

16. Taught two-hour Professional Enrichment Course (What is New in Neutron Detection?) at the 2011 Midyear Health Physics Meeting, Charleston, S.C., February 6, 2011.
17. Taught one-hour course on the Use of Survey Meters and Portal Monitoring for Radiological Triage, March 19, 2011, Training of Radiation Response Volunteer Corps, Florida Chapter of the HPS, Orlando, FL.
18. Taught one-hour Refresher Course on Neutron Detection at the 2011 IEEE NSS/MIC meeting, Valencia, Spain, October 2011.
19. Co-taught two-hour Professional Enrichment Course with Dr. Wesley Bolch of the University of Florida (Use of Portable Survey Meters and Portal Monitors for Radiation Triage), 56th Annual Meeting of the Health Physics Society, 2011.
20. Co-taught shortcourse (with Chris Wang) on Radiation Detection and Measurement for TMS, Inc, McMaster University, Hamilton, Ontario, June 2012.
21. Co-taught shortcourse (with Chris Wang) on Radiation Detection and Measurement for TMS, Inc., Idaho National Laboratory, Idaho Falls, ID, June 2013.
22. Taught 2-day Shortcourse on Neutron Detection for TMS, Inc. at Canadian Radiation Protection Association, Vancouver, Canada, May 2014.
23. Taught two-hour Professional Enrichment Course (What is New in Neutron Detection?) at the 2014 Summer Health Physics Meeting, Baltimore, MD, July 2014.
24. Taught 5-day Shortcourse on Radiation Shielding for TMS, Inc. at Minnesota Department of Health, St. Paul, MN, July 2014.
25. Taught 3-day Shortcourse on Radiation Shielding for TMS, Inc. at Bruce Power, Canada, September 2014.
26. Taught 3-day Shortcourse on Neutron Detection for TMS, Inc. at Picatinny Arsenal, December 2014.
27. Taught 3-day Shortcourse on *Radiation Shielding* for TMS, Inc. at Canada National Laboratories, Deep River, Ontario, December 7-9, 2015.
28. Taught 3-day Shortcourse on Radiation Shielding for TMS, Inc. at Bruce Power, Canada, January 2017.
29. Taught 5-Day Shortcourse on Principles of Radiation Shielding for TMS, Canadian Nuclear Laboratories, Chalk River, Canada, January 2018.
30. Taught 5-Day Shortcourse on Neutron Detection for TMS, Sandia National Laboratory, Albuquerque, NM, 2018.
31. Taught 5-Day Shortcourse on Principles of Radiation Shielding for TMS, Idaho National Laboratory, Idaho Falls, ID, April 29-May 2, 2019.
32. Taught 5-Day Shortcourse on Neutron Detection for TMS, Argonne National Laboratory, Argonne, IL, May 13-17, 2019.

VI. Service

A. Professional contributions

A1. Editorial Board memberships

Member, Editorial Advisory Board, Nuclear Technology Journal, 2002 – present.

Member, Editorial Advisory Board, Progress in Nuclear Energy Journal, 2004-present.

Member, Editorial Board, Radiation Protection Dosimetry, 2005 – present.

Guest Co-Editor, Nuclear Technology, Volume 168, Numbers 1-3, 2009 11th International Conference on Radiation Shielding, Atlanta (ICRS11 refereed proceedings)

Associate Guest Editor, NEUDOS11 Proceedings of the 11th Symposium on Neutron and Ion Dosimetry, Capetown, South Africa, Radiation Measurements Volume 45, Issue 10, December, 2010.

A2. Society Offices, Activities, and Membership

A.2.1 American Nuclear Society (ANS)

Member 1979 - Present

Radiation Protection and Shielding Division

Vice Chair, 1994 – 1995, 2011-2012

Chair, 1995 – 1996, 2012-2013

Past-Chair, 1996=1997, 2013-2014

Member, Executive Committee, 1988 – 1991, 2001-2004, 2004-2007

Chair, Nominating Committee, 1995 – 1996, 2013-2014

Member: *Ad Hoc* Health Physics Society Liaison Committee, 1991 - 1996

Member, Everitt P. Blizard Scholarship Committee, 1995 – 2001

Member, *Ad Hoc* Committee on Guidelines for Student Travel Support, 1985 – 1986

Member: RPSD Program Committee, 1985-2013.

ANS National Scholarship Policy and Coordinating Committee

Member, 1999 – 2006

Vice-Chair, 2002-2003

Chair, 2004-2006

Accelerator Applications Division

Member, Executive Committee, 1998 – 1999

Member, Program Committee, Accelerator Applications Technical Group, 1996 – 2000

Treasurer, 2007–2008

Secretary 2008-2009

Vice-Chair 2009-2010

Chair, 2010-2011

Past Chair, 2011-2012

Atlanta ANS Local Section

Member, 1993 - present

Vice Chair, 1995 - 1996

Chair, 1997 – 1999

Interim Chair 2007-2010

Treasurer, 2003-2004

ANS Standards Committees

Co-chair, ANS/ANSI 6.1.1 Neutron and Gamma-Ray Fluence-to-Dose Factors Standard Working Group, 2002 – present

Member, N17 Committee (Research Reactors, Reactor Physics, Radiation Shielding and Computational Methods), 2005 – 2011

Member, Safety & Radiological Analyses (SRA) Consensus Committee (Standards), 2013-present.

A.2.2 Health Physics Society (HPS)

Member 1981 – present. (Fellow 2005 – present)

President-Elect, 2017-2018.

President, 2018-2019.

Member, Board of Directors, 2006 – 2009: Director-at-Large (Served as Board Liaison to all Ad Hoc Committees)

Member, Finance Committee, 2006-2009

Member, Academic Program Committee, 1996 - 1999

Member, Accelerator Section, 1995 – present

Executive Board Member, Accelerator Section, Health 1999 – 2002

Member, Decontamination and Decommissioning Section, 1999 – present

Chair, *Ad Hoc* Committee on Membership, 2008-2009.

Alternate Member, N13 Standards Committee (Radiation Protection) 1997 – 1999

Member: National Standards Committee, 1989 - 1995

Member, N13 Standards Committee (Radiation Protection), 1999 – 2001

HPS Local Chapters

Member, Publications Committee, South Texas Chapter of Health Physics Society, 1986 – 1989

Member, Atlanta Chapter of the Health Physics Society, 1993-present

Vice President, Atlanta Chapter of the Health Physics Society, 1995 - 1996

President, Atlanta Chapter of the Health Physics Society, 1996 – 1997

A.2.3 IEEE Nuclear and Plasma Sciences Society

Member, 2010-present.

A.2.4 American Society for Engineering Education

Member, 1999 –2018

Nuclear and Radiological Engineering Division

Member, 1999-present

Secretary/Treasurer, 1999 – 2000

Vice Chair/Program Chair, 2000 – 2001

Chair, 2001-2002

A.2.5 Council on Ionizing Radiation Measurements and Standards (CIRMS)

2nd Vice President, 2006-2007.

1st Vice President, 2007-2008.

President, 2008-2009.

Past-President, 2009-2010.

A3. Organization and Chairmanship of Technical Sessions, Workshops and Conferences

A3.1 American Nuclear Society

Organizer/Chairman: *External Dosimetry, Phantoms, and Dose Equivalence*, Radiation Protection and Shielding Division, Winter American Nuclear Society/European Nuclear Society Meeting, Washington, DC., 1988

Session Chairman: Radiological Assessments for Decontamination, Decommissioning, and Disposal, Radiation Protection and Shielding Division, Winter American Nuclear Society, Washington, D. C., 1990

Session Organizer/Chairman: Moderating Neutron Detectors, Radiation Protection and Shielding Division, American Nuclear Society, Winter American Nuclear Society Meeting, San Francisco, CA (organized three sessions, chaired one), 1991

Session Chairman: Radiation Sources and Dosimetry, 1992 Topical Meeting -- New Horizons in Radiation Protection and Shielding, Radiation Protection and Shielding Division, American Nuclear Society, Pasco, WA, April 26 - May 1, 1992

Session Organizer (2 Sessions)/Chair (1 Session), Photon and Electron Transport Methods and Applications I and II, Radiation Protection and Shielding Division, American Nuclear Society, Winter Meeting, San Francisco, CA, 1995

Session Chairman, Computational Methods for Medical Applications, 1996 Topical Meeting, Achievements and Applications in Radiation Protection and Shielding, Radiation Protection and Shielding Division, American Nuclear Society, North Falmouth, MA, April 21-25, 1996.

Co-Chair/Organizer, Special Session on Dry Storage of Subassemblies - Shielding Issues, Radiation Protection & Shielding Division, 1997 Annual Winter Meeting.

Session Chair, Radiation Detection and Measurement, American Nuclear Society Radiation Protection and Shielding Division Topical Meeting: Technologies for the New Century, Nashville, TN, April 12-23, 1998.

Session Chair, Operational Radiation Protection, American Nuclear Society Winter Meeting, Long Beach, CA, November 14 – 18, 1999

Session Chair, Waste Management and Decommissioning, Radiation Protection for Our National Priorities: Medicine, the Environment, and the Legacy, American Nuclear Society Radiation Protection and Shielding Division Topical Meeting, September 17 – 21, 2000.

Session Chair, Dry Storage of Spent Fuel, 12th Biennial Radiation Protection and Shielding Division Topical Meeting: Radiation Serving Society, American Nuclear Society, April 14-18, 2002, Santa Fe, NM.

Session Chair, Medical Application in Radiation Protection and Shielding, American Nuclear Society Winter Meeting, Washington, D.C., November 14-18, 2005.

Session Chair, Radiation Protection and Shielding II: Detectors, Boston, MA, American Nuclear Society Annual Meeting, June 24-28, 2007.

Session Chair/Organizer, Nuclear Methods in Materials Research I, Summer American Society Annual Meeting, Anaheim, CA, June, 2008.

Session Chair/Organizer, Nuclear Methods in Materials Research II, Summer American Society Annual Meeting, Anaheim, CA, June, 2008.

Session Chair, Radiation Protection and Shielding General Session, Summer American Society Annual Meeting, Chicago, IL, June, 2012.

Session Chair/Organizer, The DOE Russian Health Studies Program: Status and Future, Winter American Nuclear Society Meeting, San Diego, CA, November 2012.

Session Chair, Radiation Protection and Shielding Division Roundtable, June 2013.

Session Chair, Radiation: Best of ICRS/RPSD 2012, Winter American Nuclear Society Meeting, November 2013.

Session Co-Chair, Fission Facility Shielding and Radiation Protection, 18th Topical Meeting of the Radiation Protection and Shielding Division of ANS RPSD2014, Knoxville, TN, September 14-18, 2014.

Chair, Radiation Protection and Shielding: Computational Methods and Applications, 2015 Winter ANS Meeting, Washington, DC, November 8-12, 2015

2018 Co-Chair, Technical Program Committee, Joint ANS/HPS Topical Meeting: Applicability of Radiation-Response Models to Low Dose Protection Standards, Pasco, WA, September 30-October 3, 2018.

Member, ANS Technical Program Committees Radiation Protection and Shielding Division

1987 Topical Meeting on Theory and Practices in Radiation Protection and Shielding, Oak Ridge, TN.

1992 Topical Meeting -- New Horizons in Radiation Protection and Shielding, Pasco, WA.

1996 Radiation Protection and Shielding, Falmouth, MA.

1998 Topical Meeting: Technologies for the New Century, Nashville, TN.

2000 Topical Meeting: Radiation Protection for Our National Priorities, Spokane, WA.

2002 Topical Meeting: Radiation Serving Society, Santa Fe, NM.

A3.2 Health Physics Society

Radiation Dosimetry, 42nd Midyear Topical Meeting of the HPS: Radiation-Generating Devices, Oakland, CA, January, 2008.

Operational Health Physics II Session, 53rd Annual Meeting of the Health Physics Society (American Conference of Radiological Safety), Pittsburgh, PA, July 13-17, 2008.

Calibration B Session, 44th HPS Mid-Year Topical Meeting on Radiation Measurements, Charleston, SC, February 6-9, 2011.

THAM-C: External Dosimetry, 59th Annual Meeting of the Health Physics Society, Baltimore, MD, July 13-17, 2014.

WPM-A External Dosimetry Biokinetics/Bioeffects, 48th Midyear Meeting, Norfolk, VA, February 1-4, 2015.

WAM-E External Dosimetry, 60th Annual Meeting of the Health Physics Society, Indianapolis, IN, July 14-18, 2015.

THAM-D Special session: Next Generation Challenges, 60th Annual Meeting of the Health Physics Society, Indianapolis, IN, July 14-18, 2015. Organized two sessions on this topic (THAM-D and THPM-D).

TPM-A. Dosimetry and Dose Assessment, 49th Midyear Meeting of the Health Physics Society, January 31-February 3, 2016.

TPM-B, Future Challenges in Radiation Protection, 61st Annual Meeting of the Health Physics Society, Spokane, WA, July 17-21, 2016. Organizer.

Chair, 2019 HPS Midyear Meeting, Plenary Session, San Diego, CA, February 17-21, 2019.

Chair, 2019 HPS Annual Meeting Plenary Session, Orlando, FL, July 7-11, 2019.

A.3.3 IEEE

Member: Local Program Committee, IEEE 11th Symposium on Fusion Engineering, Austin, TX, November 18-22, 1985

Co-Chairman: Poster Session: Engineering Problems of Future Fusion Reactors; Experimental and Diagnostics Systems Design, IEEE 11th Symposium on Fusion Engineering, Austin, TX, November 18-22, 1985

Session Chair, N23 - Gamma Ray and Neutron Detection 3, 2011 IEEE Nuclear Science Symposium and Medical Imaging Conference, Valencia, Spain.

Session Co-Chair, N5 – Neutron Detectors and Instrumentation I, 2012 IEEE Nuclear Science Symposium and Medical Imaging Conference, Anaheim, CA.

Session Co-Chair, N16 - Instrumentation for Security I: Active and Imaging, 2016 IEEE Nuclear Science Symposium and Medical Imaging Conference, Strasbourg, France, October 29-November 6, 2016.

A.3.4 International Conference on Radiation Shielding

Technical Program Chairman: Eighth International Conference on Radiation Shielding (Sponsored by the Radiation Protection and Shielding Division, American Nuclear Society), Arlington, TX, April 24 – 27, 1994.

Session Chair, *SKYSHINE*, 9th International Conference on Radiation Shielding (ICRS-9), October 17-22, 1999, Tsukuba, Japan, 1999.

Session Co-Chair, *Radiation Dosimetry II*, 10th International Conference on Radiation Shielding (ICRS-10), Funchal, Madeira, Portugal , 2004.

Session Co-Chair, *Buildup Factor, Albedo and Point Kernel Methods, Penetration and Duct Streaming, Skyshine II*, 10th International Conference on Radiation Shielding (ICRS-10), Funchal, Madeira, Portugal, 2004.

General Chair, 11th International Conference on Radiation Shielding, Atlanta, GA, April 13- . , 2008.

Session Co-Chair, *Radiation Dosimetry 1*, 12th International Conference on Radiation Shielding, Nara, Japan, September, 2012.

Member, Technical Program Committee, 9th International Conference on Radiation Shielding (ICRS-9), October 17-22, 1999, Tsukuba, Japan, 1998-1999.

Member, Technical Program Committee, 10th International Conference on Radiation Shielding (ICRS-10), May 9-14, Funchal, Madeira, Portugal, 2002-2004.

Member and Co-Track Leader of Radiation Dosimetry Track, Technical Program Committee, 10th International Conference on Radiation Shielding (ICRS-10), Funchal, Madeira, Portugal, 2002-2004.

Member, Technical Program Committee, 12th International Conference on Radiation Shielding, Nara, Japan, 2012.

A.3.5 Other

Session Chair, Source Terms and Related Data – Electron, Proton and Ion Accelerators and Spallation Sources, Workshop on the Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF-7), Lisbon, Portugal, 2004.

Member, Executive Scientific Committee, NEUDOS11: 11th Neutron and Ion Dosimetry Symposium, iThemba Labs, Capetown, South Africa, October 12-16, 2009, under the auspices of the European Dosimetry Group (EURADOS).

A4. Technical Journal or Conference Referee Activities

Judge, Best Paper Award American Nuclear Society Meeting: 1988 Winter, 1991 Winter, 1992 Winter, 1994 Winter, 2012 Summer.

Reviewer, 2010 IEEE Nuclear Science Symposium and Medical Imaging Conference, Knoxville, TN.

Reviewer, 2012 IEEE Nuclear Science Symposium and Medical Imaging Conference, Anaheim, CA.

Paper Reviewer: Lithium Blanket Program at the LOTUS Neutron Source Facility, Nuclear Technology Experiments and Facilities, and Fusion Nucleonics Sessions, Seventh Topical Meeting on the Technology of Fusion Energy, American Nuclear Society, Reno, NV., June 1986

Journal Reviewer

Medical Physics Journal, 1993 – 1996, 1999 – 2001, 2003, 2016, 2017

Nuclear Instruments and Methods Journal, 1995, 2000, 2003, 2013

Health Physics Journal, 1990 - 1993, 1995, 1997 – 2004, 2008, 2010, 2011, 2013, 2015, 2017

Radiation Physics and Chemistry, 1997, 2000 – 2001

Journal of Environmental Radioactivity, 1997

IEEE Transactions on Nuclear Science, 1998, 2000, 2003, 2012, 2013

Nuclear Science and Engineering Journal, 1998, 1999

Nuclear Technology Journal, 1998, 1999, 2003 – 2004, 2009-2015, 2017

Progress in Nuclear Energy, 2000

Applied Radiation and Isotopes, 2000, 2011

Fusion Technology, 1986

Annals of Nuclear Energy, 2004-2005

Radiation Protection Dosimetry Journal, 2005-present

Journal of Radioanalytical and Nuclear Chemistry, 2015

Radiation Measurements Journal, 2006, 2010, 2012

Space Weather, 2009-2010

Radiochimica Acta, 2010

Radiation Research, 2016

Europhysics Letters (European Physical Society), 2019

A5. Proposal Panels and Reviews

A.5.1 Department of Energy

Invited Participant: 11th Department of Energy Workshop on Personnel Neutron Dosimetry, Las Vegas, NV, June 4-7, 1991

Proposal Reviewer: Applied Health Physics Program, Department of Energy, EH-41, 1992

DOE Program Reviewer: Effective Dose Equivalent Dosimeter System Tests, Applied Health Physics Research Program, Battelle Pacific Northwest National Laboratories, 1993

Proposal Reviewer: DOE Environmental Restoration and Waste Management Junior Faculty Award Program, 1993

Panel Moderator and Member: Health Sciences Merit Review Panel, Department of Energy's Environmental Management Science Program Proposal Review, 1997

Member, U. S. Scientific Review Group of the Russian Health Studies Program, 2003-present.

Chair, U.S. Scientific Review Group of the Russian Health Studies Program, 2005 – present

Member, NNSA NA-24 Proliferation Deterrence Merit Review Team, 2009, 2012, 2014

Proposal Reviewer, DOE SBIR/STTR program, 2010.

Proposal Reviewer, DOE NEUP Research Reactor Program, 2010.

Proposal Reviewer, DOE NEUP Infrastructure and Research Reactor Program, 2011.

Proposal Reviewer, DOE NEUP Infrastructure Program, 2013, 2014, 2016.

Fellowship Selection Committee, DOE NEUP, 2014.

NEUP Scholarship Selection Committee, DOE NEUP, 2015.

A.5.2 NASA

Member, Radiation Shielding Proposal Peer Review Panel, Microgravity Research Division, 1997, 1999.

Chair, Peer Review Panel on Radiation Shielding, Microgravity Research Division, 2003.

Member, Radiation Dosimetry Review Panel, NASA SRPE/NSBRI Radiation Review, 2007.

A.5.3 Other

Reviewer: National Science Foundation, 1982, 1985.

Proposal Reviewer, Defense Threat Reduction Agency, Topic Per5-A and Per5-Y-1, 2010.

A6. Other Involvement

Invited Participant, NASA Workshop on Research for Space Exploration: Physical Sciences and Process Technologies, Cleveland, OH. 1997.

Radiation Effects Research Foundation

Member, Radiation Effects Research Foundation Joint Japanese-American Senior Review Panel of Dosimetry System 2002 (DS02), Re-Evaluation of the Japanese Atomic Bomb Dosimetry, 2002-2004

U. S. Co-Chair, Joint American-Japanese Committee to Update the DS02 Organ Doses for Atomic Bomb Survivor Dosimetry, 2015-2017.

International Commission on Radiological Protection

Member, International Commission on Radiological Protection Committee 2, Task Group 4 on Dose Calculations (DOCAL), 2002-2012.

Corresponding Member, International Commission on Radiological Protection Committee 2, Task Group 90: Age-dependent Dose Conversion Coefficients for External Exposures to Environmental Sources, 2012 -present.

International Commission on Radiation Units and Measurements

Co-Chair, ICRU Report Committee 26, Operational Dose Quantities, 2010-present.

Professional Registration

Texas State Board of Registration for Professional Engineers, Certificate No. 49365 6/1981 - 3/1994

Professional Engineer, State of Georgia, License No. 021261, 6/1994 – present

Academic Reviews

External Review, University of Utah Department of Civil and Environmental Engineering, 2007.

Peer Review Team member, Academic Program Evaluation of the Nuclear Engineering Department at Texas A&M University, 2015.

Review Panel Member, Nuclear Engineering 10-Year Graduate Program Review, Oregon State University, 2016.

Other

Expert Witness: Texas Senate Committee on NORM and NARM Waste Hearing, San Antonio, TX, October 5, 1989

Roster, International Atomic Energy Agency's Experts Program, 1994 - 2000

Battelle Pacific Northwest National Laboratory Affiliate Staff Scientist. 1994 – 2004

B. Public and Community Service

Presentations

1. *Radiation: What is It?*, High School Science Teacher's Workshop on Nuclear Energy, Austin, TX Independent School District, 1991
2. *Radiation: What Is It?*, High School Science Teacher's 1992 Workshop on Nuclear Energy, Round Rock, TX Independent School District, 1992
3. **Nuclear Energy*, North Cobb High School, Kennesaw, GA, 1993
4. *Nuclear Energy: Scourge or Scapegoat?*, Georgia Tech Faculty/Staff Christian Fellowship, 1998
5. *How I See God's Handiwork in My Profession*, Georgia Tech Westminster Christian Fellowship, 1999
6. *Status of Nuclear Engineering at Georgia Tech*, Citizens Advisory Council on Energy, 2000
7. *Status of Nuclear Engineering at Georgia Tech*, Citizens Advisory Council on Energy, 2004
8. *Status of Nuclear Power in Georgia*, Senior Citizens Educational Program, Brazelton, GA, 2012
9. *Status of Nuclear Power in Georgia*, Men's Club, Avondale Estates, GA, 2013

C. INSTITUTE CONTRIBUTIONS

C1. INSTITUTE COMMITTEE SERVICE

Member, Institute Graduate Committee, 1996 - 2002

Chair, Institute Graduate Committee, 1999 - 2002

Member, Institute Radiation Safety Committee, 1997 – 2003, 2010-2015

Chair, Institute Radiation Safety Committee, 2002 - 2003

Member, Technical Safety Review Committee, 1997 - 2003

Ex Officio Member, Academic Senate Member, 1999 – 2002

Member, Committee on Committees, 2002

GT-FIRE Proposal Reviewer, 2010, 2011

Chair, Technical Safety Review Committee (Neely Final Decommissioning), 2011-2012

Member, Student Honor Committee, 2012-2018

C2. COLLEGE COMMITTEE SERVICE

C3. SCHOOL COMMITTEE SERVICE (WOODRUFF SCHOOL)

Advisor, Georgia Tech Student Branch, Health Physics Society, 1993 - 2004

Chair, Health Physics Qualifying Examination Committee, Fall 93, Spring 94, Fall 94, Spring 95, Spring 97, Fall 97

Chair, Health Physics, Radiological Engineering Research Group, 1993 - 1996

Member, Woodruff School Graduate Studies Committee, 1993 – 1995, 2016-2018.

Faculty Sponsor, Central Regional American Nuclear Society Student Conference on Nuclear Science and Engineering, College Station, TX, 4/1993

Member, Woodruff School Honors and Awards Committee, 1994 – 1995, 2009-2013

Chair, Woodruff School Graduate Committee Subcommittee on Nonresident Students, 1994 - 1995

Chair, Nuclear Engineering/Health Physics Recruiting Committee, 1994 - 1996

Chair, Nuclear Engineering, Radiological Engineering & Health Physics Research Group, 1996 – 2001

Member, Woodruff School Computer Committee, 1995 - 1996

Member, Woodruff School Undergraduate Curriculum Committee, 1996 – 1998, 2001 - 2002

Member, Woodruff School Faculty Recruiting Committee, 1996 - 1998

Member, Woodruff School Reappointment, Promotion and Tenure Committee, 1998 – 2000, 2014-2015

Member, Woodruff School Post-Tenure Review Committee, 2001 – 2002, 2014

Member and Chair, Woodruff School Periodic Peer Review Committee, 2004 - 2006

Member, Woodruff School Faculty Advisory Committee, 2004 – 2006

Secretary, Woodruff School Faculty Advisory Committee, 2005-2006

Member, Woodruff School Instructional Laboratory Committee, 2007-2009

Chair, NRE/MP Faculty Recruiting Committee, NRE/MP Program, 2008-2009

Member, Woodruff Faculty Advisory Committee, 2014-2016, 2018-2020

Member, Woodruff Faculty Development Committee, 2017-present.

Member, Woodruff Strategic Planning Committee, 2018-present.

University of Texas

Faculty Advisor, Chi Alpha Christian Fellowship, 1983 - 1992

Member, Cooperative Engineering Education Committee, 1989 - 1992

Member, Graduate Student Recruiting Committee, 1990 - 1992

Member, Graduate Student Recruiting, Nuclear Engineering (ME), 1981 - 1992

Member, ME Fellowship Selection Committee, 1989 - 1992

Advisor, Biomedical Engineering Block Option (ME), 1986 - 1992

Advisor, Co-op Engineering Education (ME), 1989 - 1992

Advisor, UT Student Chapter American Nuclear Society, 1982 - 1992

Member, Print Shop Procedures Committee (ME), 1990

Member, Graduate Student Recruiting Committee (ME), 1990 - 1992

Faculty Sponsor, Eastern Regional American Nuclear Society Student Conference on Nuclear Science and Engineering, Gainesville, FL, 1991

Organizer/Faculty Sponsor, South Texas Chapter of the Health Physics Society Student Paper Meeting, Austin, TX, 1991

Organizer/Faculty Sponsor, South Texas Chapter of the Health Physics Society Student Paper Meeting, Waco, TX, 1992