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retired March 2009 from,  
University of California  
Lawrence Livermore National Laboratory

**Date and Place of Birth**

November 22, 1939 Brooklyn, New York

**Education**

Bachelor of Science, August 1961 (Marine Engineering), U.S. Merchant Marine Academy

Master of Science, January 1964 (Nuclear Science and Engineering) Columbia University

Doctor of Engineering Science, September 1969 (Nuclear Science and Engineering) Columbia University.

**Thesis**

"Numerical Solution of the Linear Integral Boltzmann Transport Equation"

**Thesis Advisors**

Professors Herbert Goldstein and Leon J. Lidofsky

**Honors**

Dean's List, Graduated Cum Laude (1961).

Certificate for Outstanding Achievement in Graduate Studies (1964).

Paper Presentation Award, American Nuclear Society Student Conference (1966).

Elected to Kappa Chapter, Sigma Xi (1967).

Director of winter workshops on nuclear physics and reactor engineering, International Centre for Theoretical Physics, Trieste, Italy (1980-2009).

Advisory Editor, Nuclear Science and Engineering (1989-present)

Associate Editor, Radiation Physics and Chemistry (2006-present)

**Professional Experience**

1961-1962 Third Assistant Engineer, U.S. Merchant Marine

1963-1964 Third Assistant Engineer, U.S. Merchant Marine (summers)

1963-1964 Instructor, Electrical Engineering, U.S. Merchant Marine Academy, King's Point, New York

1966-1967 Nuclear Consultant, Charles F. Bonilla &amp; Associates, Tenafly, New Jersey

1967-1968 Assistant Physicist, National Neutron Cross Section Center, Brookhaven National Laboratory, Upton, New York

1968-1972 Associate Physicist, National Nuclear Cross Section Center, Brookhaven National Laboratory, Upton, New York

1972-1972 Physicist, National Nuclear Cross Section Center, Brookhaven National Laboratory, Upton, New York

1972-1979 Physicist, Lawrence Livermore Laboratory, Livermore, California

1979-1987 Physicist, International Atomic Energy Agency, Vienna, Austria

1987-2009 Physicist, Lawrence Livermore Laboratory, Livermore, California

2009-Present Retired

**Professional Societies**

Sigma Xi

American Nuclear Society

American Association for the Advancement of Science

New York Academy of Science

**Research Reports and Publications**

1. "RIGEL - A Code to Retrieve ENDF/B Data," BNL-50300, ENDF-110, (TID-4500) (1970).
2. "PLOTFB - A Code to List or Plot ENDF/B Data," BNL-50300, ENDF-100, (TID-4500) (1970).
3. "DICTION - A Code to Prepare Random Access Pointers for ENDF/B Data," in BNL-110, ENDF-110 (TID-4500) (1970).
4. "Angular Distribution in Neutron Induced Reactions - Third Edition, Vol. I," BNL-400 (EANDC(US)-128 "U") (1971).
5. "Angular Distribution in Neutron Induced Reactions - Third Edition, Vol. II," BNL-400 (EANDC(US)-138 "U") (1971).
6. "Graphic Displays in Cross Section Evaluation," PDP Applications in Science 2, Digital Equipment Corporation, Maynard, Massachusetts (1971).
7. "Relaxation Techniques Applied to Integral Transport Problems," BNL-16419 (1972).
8. "Closing the Pn Equations Using an Integral Equation," BNL-16479 (1972).
9. "SCOPE - The ENDF/B Interactive Graphics System," BNL-16700 (1972).
10. "Application of the Probability Table Method of Multi-Group Calculations," BNL-17000 (1972).
11. "IRT - The Experimental Cross Sections Interactive Graphics Systems," BNL-17115 (1972).
12. "ENDF/B Cross Sections," BNL-17100 (ENDF-200) (1972).
13. "Numerical Solution of the Linear Integral Boltzmann Equation, Part I: Critical Problems," BNL-16399A (1972).
14. "Numerical Solution of the Linear Integral Boltzmann Equation, Part II: Source Problems," BNL-16399B (1972).
15. with O. Ozer and C.R. Weisbin "Exact Doppler Broadening of Evaluated Neutron Cross Section," Trans. Amer. Nuc. Soc. 16, p. 320 (1973).
16. "Conservation During Doppler Broadening," Nuc. Sci. and Eng. 52, p. 498 (1973).
17. with E. Plechaty "Calculation of Resonance Self-Shielding in Pu239," Lawrence Livermore Laboratory Report UCIR-710, 1973.
18. with E. Plechaty "Calculation of Resonance Self-Shielding in U235," Lawrence Livermore Laboratory Report UCIR-711, 1973.
19. with C.R. Weisbin "Determination of Multi-Group Weighting Spectra and Cross Sections," Trans. Amer. Nucl. Soc. 17, p. 488 (1973).
20. with E. Plechaty "Calculation of Resonance Self-Shielding in Pu239 and U235," Trans. Amer. Nucl. Soc. 17, p. 488 (1973).

21. with C.R. Weisbin, J.S. Hendricks, E.M. Oblo and P.O. Soran "Multi-Group Cross Section Dependence on Weighting Function Model," Trans. Amer. Nucl. Soc. 17, p. 483 (1973).
22. "Application of the Probability Table Method to Multi-Group Calculations," BNL-50387 (ENDF-187), Brookhaven, New York (1973).
23. "Program SIGMA1 (Version 74-1)," Lawrence Livermore Laboratory Report UCID-16426, January 1974.
24. with E. Plechaty "Calculation of Resonance Self-Shielding in Pu239," Lawrence Livermore Laboratory Report UCID-16433, January 1974.
25. with R.J. Howerton and S.T. Perkins "ECSIL, A System for Storage, Retrieval and Display of Experimental Neutron Data," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 1 March 1974.
26. with T. Perkins, R. Haight, R. Howerton and M. MacGregor "A Bibliography of the Experimental Data of Neutron-Induced Reactions," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 2, March 1974.
27. with T. Perkins, R. Haight, R. Howerton and M. MacGregor "An Index of the Experimental Data of Neutron-Induced Reactions," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 3 March 1974.
28. with R. Haight, R. Howerton, M. MacGregor and T. Perkins "Graphical Experimental Data for Major Neutron-Induced Interaction," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 7, Parts A & B, April 1974.
29. "Application of the Probability Table Method to Multi-Group Calculations," Nuc. Sci. and Eng. 56, p. 387-400, (1974).
30. with R. Haight, R. Howerton, M. MacGregor and T. Perkins "Graphical Experimental Data for Supplement Neutron-Induced Interactions," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 8, Parts A & B, October 1974.
31. "Numerical Solution of the Linear Integral Boltzmann," Nuc. Sci. and Eng. 53, p. 93-106 (1974).
32. with C.R. Weisbin "Fast Reactor Cross Section Processing Codes -- Is there a Dollar Worth of Difference Between Them?" Advance Reactors: Physics Design and Economics, Eds. J.M. Kallfelz and R.A. Karam, Pergamon Press, Oxford, p. 468-490 (1975).
33. with R. Haight, R. Howerton, M. MacGregor and S. Perkins "Tabulated Experimental Data for Neutron-Induced Reactions," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 10, Rev. 1, November 1974.
34. "Application of the Probability Table Method to Multi-Group Calculations of Neutron Transport," Nucl. Sci. and Eng. 55, p. 387-400 (1974).
35. with E. Plechaty and R. Howerton "Tabular and Graphical Presentation of 175 Neutron Group Constants Derived from the LLL Evaluated Neutron Data Library (ENDL)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 16, January 1975.
36. with C. Weisbin, R. Wright and J. White "Comparison of Doppler Broadening Methods," Lawrence Livermore Laboratory Report UCRL-76628, Washington, D.C., March 1975.
37. with O. Ozer and C. Weisbin "Tabular Cross Section File Generation and Utilization Techniques," Lawrence Livermore Laboratory Report UCRL-76629, Washington, D.C., March 1975.
38. "Comments on Influence of Deep Minima on Multi-Group Cross Sections," Nuclear Science and Engineering 58, p. 261 (1975).

39. with C.R. Weisbin "Exact Doppler Broadening of Tabulated Cross Sections," Nuclear Science and Engineering 60, p. 199 (1975)
40. with R. Howerton, R. Haight, M. MacGregor, T. Perkins and E. Plechaty "The LLL Evaluated Nuclear Data Library (ENDL): Evaluated Techniques, Reaction Index and Description of Individual Evaluations," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 15A, September 1975.
41. with E. Plechaty and R. Howerton "Tables and Graphs of Photon Interaction Cross Sections from 1.0 keV to 100 MeV Derived from the LLL Evaluated Library (ENDL)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 6, Rev. 1, October 1975.
42. "Comments on Resonance Region Analysis Without Resonance Parameters," Lawrence Livermore Laboratory Report UCRL-78080, April 1976.
43. with E. Plechaty, R. Howerton and J. Kimlinger "Tabular and Graphical Presentation of 175 Neutron Group Constants Derived from LLL Evaluated Neutron Data Library (ENDL)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 16, Rev. 1, April 1976.
44. with R. Howerton, M. MacGregor, T. Perkins and E. Plechaty "Graphical Presentation of Cross Sections from the LLL Evaluated Neutron Data Library (ENDL)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 15B, April 1976.
45. "Direct Calculation of Cross Section Probability tables," Trans. Amer. Nucl. Soc. 23, p 526 (1976).
46. with E. Plechaty "Resonance Self-Shielding Calculations Using the Probability Table Method," Lawrence Livermore Laboratory Report UCID-17230, August 1976.
47. with M. MacGregor, R. Howerton and T. Perkins "An Integrated System...A Bibliography of the Experimental Data of Neutron - Induced Interactions," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 2, July 1976.
48. with M. MacGregor, R. Howerton and T. Perkins "An Integrated System...An Index of the Experimental Data of Neutron - Induced Interactions," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 3, July 1976.
49. with R. Howerton, M. MacGregor and T. Perkins "An Integrated System...Graphical Experimental Data for Major Neutron-Induced Interactions ( $Z < 55$ )," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 7A, July 1976.
50. with R. Howerton, M. MacGregor and T. Perkins "An Integrated System...Graphical Data for Major-Induced Interactions ( $Z \geq 55$ )," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 7B, July 1976.
51. with R. Howerton, M. MacGregor and T. Perkins "An Integrated System...Graphical Experimental Data for Supplemental Neutron-Induced Interactions ( $Z < 55$ )," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 7B, July 1976.
52. with R. Howerton, M. MacGregor and T. Perkins "An Integrated System...Graphical Experimental Data for Supplemental Neutron-Induced Interactions ( $Z \geq 55$ )," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 8B, July 1976.
53. with M. MacGregor and T. Perkins "An Integrated System...Neutron-Induced Interactions: Tabulated Experimental Data," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 10, July 1976.

54. with K. Hill, R. Howerton and T. Perkins "An Integrated System for Production of Neutronics and Photonics Calculated Constants," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 1, September 1976.
55. "Program SIGMA1: Doppler Broaden Evaluated Data in the ENDF/B Format (Version 76-2)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17B, January 1977.
56. "Program LINEAR: Linearize Evaluated Data in the ENDF/B Format (Version 76-2)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17A, January 1977.
57. with R.J. Howerton, M. MacGregor and T. Perkins "Neutron Induced Angular Energy Distributions: Graphical Experimental Data," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 19, April 1977.
58. with C.R. Weisbin "The Role of "Standard" Fine Group Cross Section Libraries in Shielding Analysis," Proc. of Fifth International Conference on Reactor Shielding, p. 472, Knoxville, Tennessee, April 1977.
59. with E. Plechaty and L. Levitt (Brookhaven) "Applications of the Probability Table Method to Practical Problems," Lawrence Livermore Laboratory Report UCRL-79759, San Francisco, CA, December 1977.
60. "Calculation of Probability Table Parameters to Include Intermediate Resonance Self-Shielding," Lawrence Livermore Laboratory Report UCRL-79761, San Francisco, CA, December 1977.
61. with S.T. Perkins "Multigroup Constants for Charged Particle Elastic Nuclear (Plus Interference)," Lawrence Livermore Laboratory Report UCRL-17564, August 1977.
62. with E.F. Plechaty, R.J. Doyas, C.R. Weisbin and J.E. White "Cross Section Probability Tables in Multigroup Transport Calculations," Lawrence Livermore Laboratory Report UCRL-80655, Livermore, CA, March 1978.
63. "Definition of Two Band Parameters for Use in Photon Transport Calculations," Lawrence Livermore Laboratory Report UCID-17774, April 1978.
64. "Multi-Band Parameters and Bondarenko Self-Shielded Cross Sections Derived from the ENDL Library," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 20, 1978.
65. "Program LINEAR: Linearize Evaluated Data in the ENDF/B Format (Version 78-1)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17A, July 1978.
66. "Program SIGMA1: Doppler Broaden Evaluated Data in the ENDF/B Format (Version 78-1)," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17B, July 1978
67. "Multiband Calculations of Neutron and Photon Transport," Energy and Technology Review, Lawrence Livermore Laboratory, Livermore, CA, October 1978.
68. with E.F. Plechaty and R.J. Howerton "Tables and Graphs of Photon Interaction Cross Sections from 100 eV to 100 MeV Derived from the LLL Evaluated Nuclear Data Library," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 6, Rev. 2, October 1978.
69. with E.F. Plechaty and R.J. Howerton, "Tabular and Graphical Presentation of 175 Neutron Group Constants Derived from the LLL Evaluated Nuclear Data Library," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 16, Rev. 2, October 1978.
70. with R.J. Howerton, M.H. MacGregor and E.F. Plechaty "The LLL Evaluated Nuclear Data Library (ENDL): Graphs of Cross Sections from Library," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 15b, Rev. 1, October 1978.

71. "Program ECSX4 (Version 78-1): Conversion of Experimentally Measured Cross Section Data From the Four Center Exchange (X-4) Format to the Livermore ECSIL Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 1, Part B, December 1978.
72. "DOWNER (Version 79-1): Group Collapse Cross Sections and Transfer Matrices," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17, Part F, January 1979.
73. "Program EVALPLOT (Version 79-1): Plot Data in the Evaluated Nuclear Data File/Version B (ENDF/B) Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17, Part E, February 1979.
74. "Program SIGMA1 (Version 79-1): Doppler Broaden Evaluated Cross Section in the Livermore Evaluated Nuclear Data Library (ENDL) Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 21, Part C, March 1979.
75. with S.T. Perkins "Conservation of Reaction Rate and Average Rate of Energy Loss in Charged Particle Multigroup Transport," (to be submitted for publication in Nuclear Science and Engineering).
76. with R.J. Howerton and E.F. Plechaty "Temperature Effects on Charged Particle Induced Cross Sections," Technical Note, Nuclear Science and Engineering 74, 140-147 (1980).
77. "Program LINEAR (Version 79-1): Linearize data in the Evaluated Nuclear Data File/Version B (ENDF/B) Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17, Part A, Rev. 2, October 1979.
78. "Program SIGMA1 (Version 79-1): Doppler Broaden Evaluated Cross Sections in The Evaluated Nuclear Data File/Version B (ENDF/B) Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17, Part B, Rev. 2, October 1979.
79. "Program RECENT (Version 79-1): Reconstruct Energy Dependent Cross Sections from Resonance Parameters in the Evaluated Nuclear Data File/Version B (ENDF/B) Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17, Part C, October 1979.
80. "Program GROUPIE (Version 79-1): Calculate Bondarenko Self-Shielded Cross Sections and Multiband Parameters from Data in the Evaluated Nuclear Data File/Version B (ENDF/B) Format," Lawrence Livermore Laboratory Report UCRL-50400, Vol. 17, Part D, October 1979.
81. with G.C. Pomraning "The Multiband Method in Radiative Transfer Calculations," Lawrence Livermore Laboratory Report UCRL-83731, December 1979, The Journal of Quantitative Spectroscopy and Radiation Transfer, 24, 97 (1980).
82. with R.J. Howerton and E.F. Plechaty "Temperature Effects on Charged Particle Induced Cross Sections", Nuclear Science and Engineering, 74, 140, May 1980.
83. with S.T. Perkins "Elastic Nuclear Plus Interference Cross Sections for Light Charged Particles", Nuclear Science and Engineering, 77, 20, January 1981.
84. with H.D. Lemmel "The Computation Format for Experimentally Measured Data ", NDS-Memo-408, June 1981.
85. "Introduction to the EXFOR System", NDS-Memo-429, July 1981.
86. "Summary of ORR and YAYOI data for the REAL-80 Project", IAEA, Vienna, IAEA-NDS-33, February 1981.
87. Editor, Proceedings of the IAEA Consultants Meeting on Uranium and Plutonium isotope Resonance Parameters, INDC(NDS)-129, IAEA, Vienna (1982).

88. with O. Schwerer "Comparison of Uranium and Plutonium Group Averaged Cross Sections and Staircase Plots", Proc. IAEA Consultants Meeting on Uranium and Plutonium Resonance Parameters, INDC(NDS)-129, IAEA, Vienna (1982).
89. with V. Pronyaev "Comparison of Strength Functions and Average Level Spacing for U and Pu isotopes", Proc. IAEA Consultants Meeting on Uranium and Plutonium Resonance Parameters, INDC(NDS)-129, IAEA Vienna (1982);
90. with W.L. Zijp, C. Ertek, E.M. Zsolnay, E.J. Szondi and H.J. Nolthenius "First Results of the REAL-80 Exercise", Proc. IAEA Advisory Group Meeting on Nuclear Data for Radiation Damage Assessment and Related Safety Aspects", IAEA, Vienna, INDC(NDS)-128 (1982).
91. with N. Kocherov and P.K. McLaughlin "The International Reactor Dosimetry File (IRDF-82)", IAEA, Vienna, IAEA-NDS-41/42 and 48 (1982).
92. Summary of the ENDF/B Pre-processing Codes", IAEA, Vienna, IAEA-NDS-39, (1982).
93. with W.L. Zijp, C. Ertek, E.M. Zsolnay, E.J. Szondi and H.J. Nolthenius "Results of the REAL-80 Exercise", Proc. Fourth ASTM Meeting, Washington D.C., March 1982.
94. with N. Kocherov and P.K. McLaughlin "The International Reactor Dosimetry File (IRDF-82)", Proc. Fourth ASTM Meeting, Washington, D.C., March 1982.
95. with W.L. Zijp, H.J. Nolthenius, E.M. Zsolnay, E.J. Szondi, G.C.H.M. Verhaag and C. Ertek "Interim Report on the REAL-80 Exercise", Netherlands Energy Research Foundation, Petten, Netherlands, ECN-82-65, May 1982.
96. with S.T. Perkins "Conserving Average Rate of Energy Loss in Transport Calculations for Light Charged Particles", Nuclear Science and Engineering, 81, 75, May 1982.
97. with W.L. Zijp and R.E. MacFarlane "Verification of Nuclear Cross Section Processing Codes", Proc. of the Topical Meeting on Advances in Reactor Physics and Core Thermal Hydraulics, 1069, Kiamesha Lake, New York, September 1982.
98. "Preliminary Information on the Interregional Training Course on the Methodology of Evaluation and Processing of Nuclear Data for Nuclear Reactor Applications", IAEA, Vienna, INDC(81), December 1982.
99. with W.L. Zijp, E.M. Zsolnay, H.J. Nolthenius, E.J. Szondi, G.C.H.M. Verhaag and C. Ertek "Final Report on the REAL-80-Exercise", Netherlands Energy Research Foundation, Petten, Netherlands, ECN-128/INDC(NED)-7, February 1983.
100. with V.G. Pronyaev "INDL/F-83: Evaluated Neutron Reaction data Library for INTOR Fusion Neutronics Calculations", IAEA, Vienna, IAEA-NDS-57, March 1983.
101. with N. Kocherov and P.K. McLaughlin "Comparison of Experimental and Calculated CF-252 and U-235 Spectrum Averaged Cross Sections using the International Reactor Dosimetry File (IRDF-82)", Nuclear Science and Engineering, 83, 497, April 1983.
102. Editor "Proceedings of the IAEA Consultants' Meeting on the Assessment of the Results of the REAL-80 Project on Cross Section Unfolding Codes and Planning for Continuation of this Project", IAEA, Vienna, INDC(NDS)-148, June 1983.
103. Editor "Proceedings of the IAEA Consultants' Meeting on the U-235 Fast Neutron Cross Section and the CF-252 Fission Neutron Spectrum", Smolenice, Czechoslovakia, INDC(NDS)-146, July 1983.



104. with V.G. Pronyaev and H.D. Lemmel "Current Problems in the Data Base for a Re-evaluation of the U-235 fission cross section in the Fast Neutron Energy Region", Proc. of the IAEA Consultants' Meeting on the U-235 Fast Neutron Cross Section and the Cf-252 Fission Neutron Spectrum", Smolenice, Czechoslovakia, INDC(NDS)-146, July 1983.
105. with H.D. Lemmel and J.J. Schmidt "Nuclear Data Files for Reactor Calculations and Other Applications: Experimental Data - Evaluated Data", Computer Physics Communications, 33, North-Holland, Amsterdam (1984).
106. with J. Russell "Implementing and Using the Database Management System", Database Management in Science and Technology, 197, Elsevier Science Publishers B.V./CODATA (1984).
107. Editor "Proceedings of the IAEA Consultants' Meeting on Nuclear Data for Structural Materials", IAEA, Vienna, INDC(NDS)-152, October 1984.
108. "Comparison of Fe, Na and Cr Evaluated Nuclear Data", Proc. IAEA Consultants' Meeting on Nuclear Data for Structural Materials, IAEA, Vienna, INDC(NDS)-152, October 1984.
109. with P.K. McLaughlin "The International Reactor Dosimetry File (IRDF-85)", IAEA, Vienna, IAEA-NDS-41/42 and 48, rev. 1 (1985).
110. "ENDL-84: The Lawrence Livermore National Laboratory Evaluated Nuclear Data Library in the ENDF/B Format", IAEA, Vienna, IAEA-NDS-11, rev. 4, May 1985.
111. "Report on the IAEA Cross Section Processing Code Verification Project", IAEA, Vienna, INDC(NDS)-170, May 1985.
112. with J.J. Schmidt and A. Lorenz "Basic Nuclear Data for Nuclear Fission and Fusion Reactors", The Role of Data in Scientific Progress, Elsevier Science Publishers B.V., North-Holland, Amsterdam/CODATA (1985).
113. "The Accuracy of Data Processing", Proc. of the International State of the Art seminar on Nuclear Data, Cross Section Libraries and their Application in Nuclear Technology, Bonn, October 1985.
114. with E.M. Gryntakis and G. Mundy "Thermal Neutron Cross Sections and Infinite Dilution Resonance Integrals", Handbook on Nuclear Activation Data, IAEA, Vienna (in press).
115. "The Accuracy of Data Processing", submitted for publication as a technical note in Nuclear Science and Engineering.
116. "Nuclear Cross Section Processing", Handbook of Nuclear Reactor Calculation, vol. I, Yigal Ronen, Editor, CRC Press, inc., Boca Raton, Florida (1986).
117. "Summary of ENDF/B Pre-processing Codes", IAEA, Vienna, IAEA-NDS-39, rev. 1, February 1986.
118. with P. Vertes, A. Trkov "Proposed Card Image Format for Multigroup Constants", INDC(NDS)-169/NI, January 1985.
119. with W.L. Zijp, E.M. Zsolnay, H.J. Nolthenius, E.J. Szondi, G.C.H.M. Verhaag and C. Ertek "Final Report on the REAL-80 Exercise", BME-TR-RES-6/82, February 1983.
120. "Recommended Resonance-Parameters from BNL-325 (Sept. 1981) for U-235,-238, Pu-239,-242, in ENDF/B format", BNL-325, February 1983.
121. "EXFOR/Computation Format Codes", C4, Nuclear Data Section, IAEA, Vienna, Austria, February 1983.

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123. with W.L. Zijp and R.E. MacFarlane "Verification of Nuclear Cross Section Processing Codes", INDC(NDS)-123/G, May 1982.
124. with W.L. Zijp and E.M. Zsolnay "Information Sheet for the REAL-84 Exercise", INDC(NDS)-166, March 1985.
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126. "Report on the IAEA Cross Section Processing Code Verification Project", INDC(NDS)-170/NI, May 1985.
127. "Program X4TOC4. Converts nuclear data from EXFOR format to a computation format.", IAEA-NDS-80, September 1986.
128. "Program PLOT4C. Plots evaluated nuclear data from ENDF format and/or experimental data in a computation format.", IAEA-NDS-79, rev. 1., June 1987.
129. "Program PLOTTAB. General plotting program.", IAEA-NDS-82, June 1987.
130. "Implementing and testing program PLOTTAB", IAEA-NDS-83, June 1987.
131. with R. Muranaka and J.J. Schmidt, Editor of Proceedings of the International Centre for Theoretical Physics' Workshop on Applications in Nuclear Data and Reactor Physics, International Centre for Theoretical Physics, Trieste, Italy, World Scientific Publishing Co. Pte Ltd, Singapore, 1987
132. with J.J. Smith "LINTAB, HEATER and PLOTTAB code package. Computer codes for model parameters and cross-section data.", IAEA-NDS-84, July 1987.
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134. "The Use of Personal Computers in Reactor Physics", UCRL-97996, January 1988, Proceedings of the International Atomic Energy Agency's Consultant's Meeting on Reactor Physics Calculations Using Small Computers, Vienna, Austria
135. "Advances in Personal Computers for Scientific Applications", UCRL-98555, April 1988, Proceedings of the International Centre for Theoretical Physics Workshop on Applied Nuclear Theory and Nuclear Model Calculations for Nuclear Technology Applications, Trieste, Italy
136. with S. Ganesan, V. Gopalakrishnan and M.M. Ramanadhan, "Verification of the Accuracy of Doppler Broadened, Self-Shielded Multigroup Cross Sections for Fast Power Reactor Applications", Ann. Nucl. Energy, to be published May 1988
137. "The Accuracy of Processed Nuclear Data", Nuc. Sci. and Eng., 99, 172-181, June 1988
138. with R. Muranaka and J.J. Schmidt, Editor of Proceedings of the International Centre for Theoretical Physics' Workshop on Applied Nuclear Theory and Nuclear Model Calculations for Nuclear Technology Applications, International Centre for Theoretical Physics, Trieste, Italy, World Scientific Publishing Co. Pte Ltd, Singapore, 1989
139. with S.T. Perkins, E.F. Plechaty and J. Rathkopf, "The All Particle Method: Coupled Neutron, Photon, Electron, Charged Particle Monte Carlo Calculations", Lawrence Livermore National Laboratory UCRL-98975,

June 1988 and the proceedings of the Seventh International Conference on Radiation Shielding, Bournemouth, England, September 1988

140. with J.A. Rathkopf, "Summary of the coordination meeting for contributors to the new Livermore photon cross section data base", Lawrence Livermore National Laboratory, UCID-21448 SUME, June 1988

141. with S.T. Perkins, "The Livermore bremsstrahlung data base", Lawrence Livermore National Laboratory, UCID-21627, February 1989

142. with S.T. Perkins, "The Livermore electron impact ionization data base", Lawrence Livermore National Laboratory, UCID-21628, February 1989

143. "A simple model to account for the production of energetic photons by bremsstrahlung", Lawrence Livermore National Laboratory, Monte Carlo Group, MC-4, May 1989

144. with S.T. Perkins, "Program IONE: a code designed to create an electron ionization data base in the ENDL format", Lawrence Livermore National Laboratory, UCID-21635, May 1989

145. with S.T. Perkins, "Program BREMS: a code designed to create a bremsstrahlung data base in the ENDL format", Lawrence Livermore National Laboratory, UCID-21694, July 1989

146. with P.K. McLaughlin "Summary of the ENDF/B Pre-processing Codes", IAEA Nuclear Data Section, Vienna, Austria, IAEA-NDS-39, Rev. 2, May 1989

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25. "IAEA Related Projects on the Processing of Nuclear Cross Section Data", presented at the Trieste Winter Course on Nuclear Physics and Reactor Engineering, ICTP, Trieste, Italy, Feb. 1982.
26. "Results of the REAL-80 Exercise", presented at the Fourth ASTM Meeting, Washington, D.C., March 1982.
27. "The International Reactor Dosimetry File (IRDF-82)", presented at the Fourth ASTM Meeting, Washington, D.C., March 1982.
28. "Verification of Nuclear Cross Section Processing Codes", presented at AERE Harwell, England, May 1982.
29. "Verification of Nuclear Cross Section Processing Codes", presented at the Topical Meeting on Advances in Reactor Physics and Core Thermal Hydraulics, 1069, Kiamesha Lake, New York, September 1982.
30. "Current Problems in the Data Base for a Re-evaluation of the U-235 fission cross section in the Fast Neutron Energy Region", presented at the IAEA Consultants' Meeting on the U-235 Fast Neutron Cross Sections and the Cf-252 Fission Neutron Spectrum", Smolenice, Czechoslovakia, July 1983.
31. "Current Methods and Computer Codes for Processing Nuclear Data and Reactor Calculations", presented at Atomic Energy Headquarters, Tripoli, Libya, September 1983.
32. "Verification of Nuclear Cross Section Processing Codes", presented at Atomic Energy Headquarters, Tripoli, Libya, September 1983.
33. "Verification of Nuclear Cross Section Processing Codes", presented at Nuclear Energy Agency (ENEA), Bologna, Italy, October 1983.
34. "Verification of Nuclear Cross Section Processing Codes", presented at ICTP, Trieste Winter Workshop on Nuclear Model Codes, Trieste, Italy, January 1984.
35. "The Effective use of Small Computers in Physics Applications", presented at the IAEA National Training Course on the Use of Micro Computers, Dar es Salaam University, Tanzania, May 1985.
36. "Verification of Nuclear Cross Section Processing Codes", presented at Institute of Atomic Energy, Beijing, China, September 1985.

37. "The Accuracy of Data Processing", presented at the International State of the Art seminar on Nuclear Data, Cross Section Libraries and their Application in Nuclear Technology, Bonn, October 1985.
38. "Verification of Nuclear Cross Section Processing Codes", presented at the Workshop on Applications in Nuclear Data and Reactor Physics, International Centre for Theoretical Physics, Trieste, February, 1986.
39. "The Use of Personal Computers in Scientific Applications", presented at the Workshop on Applications in Nuclear Data and Reactor Physics, International Centre for Theoretical Physics, Trieste, February, 1986.
40. "The Accuracy of Data Processing", presented at the IAEA Training Course on the Processing of Nuclear Data for use in Applications, Bhabha Atomic Research Centre, Bombay, India, April, 1986.
41. "The Processing of Nuclear Data", six lectures presented at the IAEA Training Course on the Processing of Nuclear Data for use in Applications, Bhabha Atomic Research Centre, Bombay, India, April, 1986.
42. "The Use of Personal Computers in Reactor Physics", presented at the International Atomic Energy Agency's Consultant's Meeting on Reactor Physics Calculations Using Small Computers, December 8-11, 1987, Vienna, Austria
43. "Advances in Personal Computers for Scientific Applications", presented at the International Centre for Theoretical Physics Workshop on Applied Nuclear Theory and Nuclear Model Calculations for Nuclear Technology Applications, February 15 - March 18, 1988, Trieste, Italy
44. "The All Particle Method: Coupled Neutron, Photon, Electron, Charged Particle Monte Carlo Calculations" presented at the Seventh International Conference on Radiation Shielding, September 12 -16, 1988, Bournemouth, England
45. "1990 Status Report on the All Particle Method: Coupled Neutron, Photon, Electron, Charged Particle Monte Carlo Calculations", presented at the Italian Nuclear Energy Agency (ENEA), Bologna Italy, Transport Seminar, February 22, 1990, Bologna, Italy
46. "Advances in Personal Computers for Scientific Applications", presented at the International Centre for Theoretical Physics Workshop on Reactor Physics Calculations for Applications in Nuclear Technology, February 12 - March 16, 1990, Trieste, Italy
47. "The All Particle Monte Carlo Method: Atomic Data Files", presented at the Nuclear Explosives Code Developers Conference, November 6-9, 1990, Monterey, California
48. "Single-Scatter Monte Carlo Compared to Condensed History Results for Low Energy Electrons", presented at the Fifth International Symposium on Radiation Physics, Dubrovnik, Yugoslavia, June 10-14, 1991.
49. "The All Particle Method: 1991 Status Report", presented at the Brazilian Meeting on Reactor Physics and Thermal Hydraulics (VIII ENFIR), Atibaia, Brazil, September 17-20, 1991.
50. "The ENDF/B-VI Photon Interaction Library", presented at the American Nuclear Society Meeting on New Horizons in Radiation Protection and Shielding, Pasco, Washington, April 26-30, 1992.
51. "Photon and Electron Data Bases and Their Use in Radiation Transport Calculations", presented at the Second Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications, Raleigh, North Carolina, Sept. 8-11, 1992.
52. "Photon Interaction Data for ENDF/B-VI", presented at the 1994 Reactor Physics Topical Meeting of the ANS, Knoxville, TN, August 11-15, 1994.

53. "Photon and Electron interaction Data Bases and Their Use in Medical Applications", presented at the 1994 World Congress on Medical Physics and Biomedical Engineering, Rio de Janeiro, Brazil, Aug. 1994.
54. "Incorporating the Livermore Photon Interaction Data Base into the Electron-Photon Monte Carlo Transport Code EGS4", presented at the International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses, Portland, Oregon, May 1995
55. "Photon and Electron Data for Use in Accelerator Applications", an invited paper presented at the Fifteenth International Conference on the Application of Accelerators in Research and Industry, held Nov. 4-7, 1998, University of North Texas, Denton, Texas.
56. "TART: Monte Carlo Radiation Transport in Industrial Applications", an Invited Paper for presentation at the Twelfth Biennial Topical Meeting of the Radiation Protection and Shielding Division, of the American Nuclear Society, April 14-17, 2002 in Santa Fe, New Mexico
57. "ENDF/B-VI Coupled Photon-Electron Data for Use in Radiation Shielding Applications", Lawrence Livermore National Laboratory, UCRL-JC-134196, February 2002, ", an Invited Paper for presentation at the Twelfth Biennial Topical Meeting of the Radiation Protection and Shielding Division, of the American Nuclear Society, April 14-17, 2002 in Santa Fe, New Mexico
58. "Application of MCNP, MERCURY and TART to Calculation of the National Ignition Facility (NIF) Shielding", an Invited Paper for presentation at the American Nuclear Society meeting, Nov. 12-16, 2006 in Albuquerque, New Mexico.
59. "COG – Publicly Available Now to Criticality Safety Practitioners", presented at the 8<sup>th</sup> International Conference on Nuclear Criticality Safety, May 28 through June 1, 2007, in St. Petersburg, Russia.
60. "PREPRO Accomplishments", LLNL-PRES-469876, March 2011, Presented at the Nuclear Criticality Program Technical Conference at Oak Ridge National Laboratory, March 1, 2011.
61. "An Alternative Approach to Creating ACE Data Files for Use in Monte Carlo Codes", Presented at the Nuclear Data Section, IAEA, Vienna, Consultant's Meeting, October 2015.
62. "On the **Self-Shielding** in the **Unresolved Resonance Range**", presented at the 29<sup>th</sup> International Conference Nuclear Energy for New Europe (NENE 2020), September 7-10, Portoroz, Slovenia