

S. LESLIE BLATT

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Education

Princeton University, Princeton, New Jersey (A. B., 1957)

Stanford University, Stanford, California (M. S., 1959; Ph. D., physics, 1965)

Professional Positions

Teaching Assistant/Research Assistant, Stanford University (1957-64)

Research Assistant, Brookhaven National Laboratory (summer, 1958)

Research Associate, The Ohio State University (1964-66)

Visiting Researcher, State University of New York at Stony Brook (fall, 1968)

Faculty Member, The Ohio State University: Assistant Professor (1966-69); Associate Professor (1969-1975); Professor of Physics (1975-87)

Research Physicist, Centre de Recherches Nucléaires,

Université Louis Pasteur, Strasbourg, France (1972-73)

Chairperson, Department of Physics, The Ohio State University (1980-86)

Dean of Graduate Studies and Research, Clark University (1987-93)

Professor of Physics, Clark University (1987- 2010)

Adjunct Professor of Education, Clark University (1993-95)

Visiting Scholar, Stanford University (summer and fall, 1994)

Professor of Physics and Education, Clark University (1995- 2010)

Chair of Physics Department, Clark University (1998-2002, 2006-2007)

Teaching

Teaching at Clark:

- *Discovering Physics*: together with Mauri and Harvey Gould, developed, presented, and designed evaluation for this non-science-majors course, using easily accessible phenomena and a small-group learning environment. (First offered in 1989.)

- *Astronomy/Exploring the Universe*: began teaching one semester each year starting in 1998; background in nuclear astrophysics helps bring research into the classroom.

- *Quantum Leaps*: treated the major themes of 20th-century physics within the broader sweep of contemporary civilization. (Offered through COPACE, 1992)

- *Energy and the Environment*: provides a background in the physics principles governing the application and transformations of energy, energy sources and resources, and investigates environmental problems where energy considerations play a central role. (First offered in 1994.) A “hands-on” version, *Energy and the Campus*, was offered for several years in collaboration with Chris Hohenemser; for this course, the Clark campus serves as an environmental laboratory.

- *Science and Society*: jointly taught with Jim Gee of the Education Department; explores the language of science and the relationships between science and its social context. (First offered in 1994.) A modified version was offered as a First-Year Seminar in AY 2005-06.

- *Ways of Knowing in the Physical and Natural Sciences* (co-taught with Marion Guerra, of the Goddard School for Science and Technology). The pilot and now continuing offering in the “Ways of Knowing” education series, combining science process and knowledge with a variety of methodological approaches.

- *Modern Physics/Quantum Physics Laboratory*. Class sessions are built on a lecture-discussion format, and the associated labs are conducted in a modified “small-group” approach similar to that of *Discovering Physics*.

- *Seeing the Light: At the Crossroads of Art and Science*. This course was especially designed for May Term in Luxembourg. “Seeing the Light” offers hands-on activities in a variety of areas including the physics of light, visual perception, and rudiments of artists’ techniques in perspective, light and shadow, and color mixing. It was offered in 2005, 2007, 2009, and will be, again, in 2011.

Courses taught at Ohio State ranged from introductory-level physics for science and engineering students (including honors sections) and physics for non-science students (including designing and setting up complete lecture demos and laboratory on satellite campus) through advanced undergraduate courses (modern physics, advanced laboratory) and graduate-level nuclear physics, research orientation for new graduate students, and teaching orientation for new teaching assistants

Service

CLARK UNIVERSITY:

- Planning and Budget Review Committee, Admissions and Financial Aid Committee
- Task Force for a University Park secondary school (collaboration of Clark with Worcester Public Schools); currently member of Program Committee for UPCS.
- Professional Development Schools steering committee (Education Department and Worcester Public Schools)
- Steering committee of the Environmental School.
- Panel participant and discussion group leader for first-year-students academic orientation program for three years; 1998, discussion leader for parents’ orientation.
- Physics Department chair, 1998-2002, and 2006-present.
- Secretary of the Faculty, 2000-2003.
- Undergraduate Academic Board 2005-2007

COMMUNITY:

- HEART (Help Educate And Renew Trust), a partnership between Temple Sinai and Emmanuel Baptist Church; after-school academic enrichment program. Founding member, serving on the steering committee and as program science teacher (1994 - 2002).
- Member of draft reading group for the Massachusetts Mathematics and Science & Technology Curriculum Frameworks (1993 - 96), of Select Task Force for teacher education requirements in science and mathematics (1995 - 97), and of the State Teacher Test in Science and Mathematics evaluation group, October, 2003.
- Member of Science task force for Worcester Public Schools, sponsored by the Worcester Alliance for Education (1993 - 1995).
- Ecotarium: Program Committee, (1989 - 2000); Corporator, 1997-2001.

- Member of the Board of Dynamy, Inc., 1995-2008; chair of the education committee, 1996-97, vice-president, 1997-98, president 1998-2000. Dynamy is a non-profit organization providing alternative and bridging academic experiences for young people during high school and at the high-school-to-college interface.

- Science education workshops and presentations for teachers, past 12 years.

Honors and Awards

- *John W. Lund Community Achievement Award*, August, 1997. This is an annual award recognizing contributions to the Worcester community by members of the Clark University community. I was honored to be the first faculty member to be selected for this award.

- *Robert H. Goddard Service Award*, March, 1998. This honor was presented to me by students and teachers of the Goddard School of Science and Technology, in recognition of my work over the previous seven years with the Goddard teachers in workshops, Ways of Knowing classes, and special programs.

Selected Accomplishments as Dean at Clark

- Established Graduate Student Council. Initiated annual grad student orientation program and Teaching Assistant workshops. Took lead role in review of all Clark graduate programs. Graduate enrollment increased by over 25% in 5-year period.

- Created incentive policy to encourage grant proposals and inclusion of more support for students on grants, the latter increasing by over 200% in 5 years. The number of externally-supported projects increased by over 60% and the number of participating faculty by over 50% in same 5-year period.

- Developed the University's first intellectual property policies.

Selected Achievements as Ohio State Physics Department Chair

- Revitalized department, adding junior faculty who earned three Sloan fellowships, one NSF Presidential Young Investigator Award, one NRL Young Investigator Award, and three DOE Outstanding Junior Investigator Awards, and senior faculty including a former Principal Scientist at Xerox Webster Research Center and a senior astrophysicist at Bartol Research Institute.

- Added undergraduate honors courses, seminar courses in current areas of physics research, and an interdisciplinary course in Science, Technology, and Human Values.

- Wrote proposals which produced significant honors and awards for the department: "Center of Excellence" designation by University administration; "Academic Challenge" award of \$270,000 from state of Ohio; award of \$500,000 grant toward establishment of an "Ohio Eminent Scholar" endowed chair, from the state Board of Regents.

Research

- Proposed and co-directed an extensive nuclear physics program at Ohio State, with continuous support from the National Science Foundation from 1966 to 1988, with grants totaling over \$5 million.

- Research advising: 7 students to M.S. degree, 14 to the Ph.D. (See second section, p. 18)

•At Clark, created and offering a variety of courses and workshops based on research findings in science education. The target audience is primarily non-science students (especially pre-service and in-service teachers). I am currently advising one graduate student in an Individually Designed Ph.D. program in this field; a former student graduated received the Ph.D. in 2001. Grants in science education are listed on page 5 of this *c. v.*

Selected Publications

A long section after page 5 lists all publications and presentations, including those in science education. This section provides a quick sampling of published works in nuclear physics.

S. L. Blatt, J. Mahieux, and D. Kohler, ELIMINATION OF PULSE PILEUP DISTORTION IN NUCLEAR RADIATION SPECTRA.

Nucl. Instr. and Meth. 60, 221 (1968).

A. M. Young, S. L. Blatt, and R. G. Seyler, DIRECT RADIATIVE CAPTURE OF ^3He BY TRITONS AND $T + ^3\text{He}$ CLUSTER STATES IN ^6Li . *Phys. Rev. Lett.* 25, 1764 (1970).

S. L. Blatt, E.S.P.: TEACHING SCIENTIFIC METHOD BY COUNTER-EXAMPLE.

Amer. J. Phys. 43, 1079 (1975).

M. A. Kovash, S. L. Blatt, R. N. Boyd, T. R. Donoghue, H. J. Hausman, and A. D. Bacher, RADIATIVE CAPTURE OF INTERMEDIATE ENERGY PROTONS TO HIGH-LYING STATES IN LIGHT NUCLEI.

Phys. Rev. Lett. 42, 700 (1979).

S. L. Blatt, CHARACTERISTIC FEATURES OF RADIATIVE PROTON CAPTURE REACTIONS AT INTERMEDIATE ENERGIES.

In *Nuclear Structure with Intermediate Energy Probes*, LA-8303-C (Los Alamos, 1980), p. 90.

M. A. Kovash, B. Andersen-Pugh, M. T. McEllistrem, J. K. Ternes, J. H. Trice, S. L. Blatt, H. J. Hausman, D. G. Marchlenski, and A. D. Bacher, QUADRUPOLE AND OCTOPOLE RADIATION FROM ^{16}O NEAR 39 MeV EXCITATION. *Phys. Rev. C* 40, R1093 (1989).

Consulting

• Malden Public Schools

-- Drafted six successful Eisenhower Grant proposals (1994-95, \$20,000; 1995-96, \$16,000; 1996-97, 1997-98, and 1998-99, \$10,000 each; 1999-2000, \$11,000).

-- Science education workshop series for teachers each year 1995-2000.

- Shore Educational Collaborative (Chelsea, Everett, Malden, Medford, Revere, Saugus, and Winthrop public school districts)
-- Short course, *Discovering Physics in the Elementary Schools*, April - May, 1995
- Alliance for Education (Worcester, MA)
Professional Development Institute: workshop presentation January 25, 1996, for elementary and middle school teachers from districts around Central Massachusetts.
- Clark University Hiatt Center for Urban Education
Professional Development Institute: workshop on state frameworks for science and technology, Sullivan Middle School (Worcester, MA), February 1, 1996.

Science education grants (physics research grants are outlined on p.4, above)

- S. L. Blatt, H. Gould, and M. Gould, “Development of a Discovery-Based Physics Laboratory Course for Prospective Pre-College Teachers.” NSF, 6/1/91 - 11/1/93, \$18,772 (plus equal university match).
- H. Gould, S. L. Blatt, and M. Gould, “Equipment for a Full-Year Course in Discovering Physics for Pre-College Teachers.” NSF, 5/15/91 - 10/15/93, \$28,132 (plus equal university match).
- S. L. Blatt, H. Gould, and C. Landee, “Discovering Physics: Extending an Innovative Approach to Schools and the Standard College Curriculum.” NSF, 2/15/93 - 7/15/95, \$240,000.
- S. Michaels, S. L. Blatt, and J. Merrill, “The Complex Instruction Project: Promoting a School-wide Community of Learners through Science.” Commonwealth of Massachusetts, 1993-94, \$67,454.
- J. Merrill, J. Fray, and S. L. Blatt, “The Complex Instruction Project: Creating School-wide Communities of Learners through Math and Science.” Teacher Innovation Grant from the CESAME project, Northeastern University. (1994-95) \$10,000.
- S. Leslie Blatt, Joan Merrill, and Sarah Michaels, “The Complex Instruction Project: Creating School-wide Communities of Learners through Math and Science.” Commonwealth of Massachusetts, 1996, \$24,468.
- Participant in Title II and Carnegie Foundation grant work in Education Department, 1997-present.

S. Leslie Blatt Publications and Presentations

I. JOURNAL PUBLICATIONS

1. D. O. Wells, S. L. Blatt, and I. F. Boekelheide.
IMPROVED PERFORMANCE OF SCINTILLATION SPECTROMETERS.
Rev. Sci. Instr. 31, 1163 (1960).
2. D. O. Wells, S. L. Blatt, and W. E. Meyerhof.
DECAY OF ^{56}Ni .
Phys. Rev. 130, 1961 (1963).
3. P. Paul, S. L. Blatt, and D. Kohler.
EVIDENCE FOR THE ISOTOPIC SPIN ASSIGNMENT FOR THE LEVEL AT 16.93 MeV IN ^9Be .
Phys. Lett. 10, 201 (1964).
4. P. Paul, S. L. Blatt, and D. Kohler.
RADIATIVE CAPTURE OF ^3He BY ^7Li .
Phys. Rev. 137, B493 (1965).
5. P. Paul, S. L. Blatt, and D. Kohler.
SEARCH FOR RESONANCES IN THE REACTION $^7\text{Li}(^3\text{He}, \alpha)^6\text{Li}$.
Phys. Rev. 137, B499 (1965).
6. S. L. Blatt.
COINCIDENCE LOSSES DUE TO PILEUP IN CROSSOVER-TIMING SYSTEMS.
Nucl. Instr. & Meth. 44, 235 (1967).
7. S. C. Ling, A. M. Young, and S. L. Blatt.
RADIATIVE CAPTURE OF ^3He BY ^7Li FROM 3 TO 6 MeV.
Nucl. Phys. A108, 221 (1968).
8. S. L. Blatt, J. Mahieux, and D. Kohler.
ELIMINATION OF PULSE PILEUP DISTORTION IN NUCLEAR RADIATION SPECTRA.
Nucl. Instr. & Meth. 60, 221 (1968).
9. S. L. Blatt, D. B. Nichols, R. G. Arns, J. D. Goss, and H. J. Hausman.
NEW THICK-TARGET TECHNIQUE FOR CHARGED-PARTICLE RADIATIVE CAPTURE STUDIES.
Nucl. Instr. & Meth. 61, 232 (1968).

10. S. L. Blatt, A. M. Young, S. C. Ling, K. J. Moon, and C. D. Porterfield.
THE REACTION $T(^3\text{He},\gamma)^6\text{Li}$ IN THE ENERGY RANGE 0.5 TO 11 MeV.
Phys. Rev. 176, 1147 (1968).

11. S. L. Blatt and D. A. D'Ippolito.
A STORAGE-CRT INTERACTIVE DISPLAY FOR NUCLEAR PHYSICS
COMPUTER SYSTEMS.
Nucl. Instr. & Meth. 79, 175 (1970).

12. E. M. Diener, J. F. Amann, S. L. Blatt, and P. Paul.
AN IMPROVED HIGH-ENERGY GAMMA SPECTROMETER.
Nucl. Instr. & Meth. 83, 115 (1970).

13. A. M. Young, S. L. Blatt, and R. G. Seyler.
DIRECT RADIATIVE CAPTURE OF ^3He BY TRITONS AND $T + ^3\text{He}$ CLUSTER STATES
IN ^6Li .
Phys. Rev. Lett. 25, 1764 (1970)

14. E. M. Diener, J. F. Amann, P. Paul, and S. L. Blatt.
ISOSPIN SPLITTING OF THE GIANT DIPOLE RESONANCE IN ^{60}Ni .
Phys. Rev. C 3, 2303 (1971).

15. S. C. Ling and S. L. Blatt.
STATES IN ^{10}B BETWEEN 18 AND 22 MeV.
Nucl. Phys. A174, 375 (1971).

16. H. R. Weller, R. A. Blue, and S. L. Blatt.
ENERGY OF THE $^{14}\text{N}(d,\gamma)^{16}\text{O}$ RESONANCE IN THE GIANT-DIPOLE REGION
OF ^{16}O .
Phys. Rev. C 5, 648 (1972).

17. S. L. Blatt, K. J. Moon, and D. Kohler.
RADIATIVE CAPTURE OF ^3He BY ^9Be FROM 1 TO 6 MeV.
Phys. Rev. C 6, 1563 (1972).

18. C. N. Chang, J. J. Kent, J. F. Morgan, and S. L. Blatt.
TOTAL CROSS SECTION MEASUREMENTS BY X-RAY DETECTION OF
ELECTRON-CAPTURE RESIDUAL ACTIVITY.
Nucl. Instr. & Meth. 109, 327 (1973).

19. J. D. Goss, S. L. Blatt, D. R. Parsignault, C. D. Porterfield, and F. L. Riffle.
ELASTIC SCATTERING OF ALPHA PARTICLES BY ^9Be AND HIGHLY
EXCITED STATES OF ^{13}C .
Phys. Rev. C 7, 1837 (1973)

20. S. L. Blatt, J. W. D. Sinclair, and L. A. Raymond.
OSCAR: A MULTIPROGRAMMED SMALL COMPUTER SYSTEM FOR
EXPERIMENTAL NUCLEAR PHYSICS.
Nucl. Instr. & Meth. 111, 53 (1973).
21. J. W. D. Sinclair, J. W. Smith, C. M. Rozsa, and S. L. Blatt.
A REAL-TIME 448,000-CHANNEL MULTIPARAMETER PULSE-HEIGHT
ANALYSIS SYSTEM.
Nucl. Instr. & Meth. 111, 61 (1973).
22. A. E. Vlieks, J. F. Morgan, and S. L. Blatt.
TOTAL CROSS SECTIONS FOR SOME (α , n) AND (α , p) REACTIONS IN
MEDIUM-WEIGHT NUCLEI.
Nucl. Phys. A224, 492 (1974).
23. R. E. Maute, D. P. D'Amato, and S. L. Blatt.
EXTENDED TABLE OF ANGULAR DISTRIBUTION COEFFICIENTS FOR
(GAMMA, PARTICLE) AND (PARTICLE, GAMMA) REACTIONS.
Atom. Data & Nuc. Data Tables 13, No. 6 (1974).
24. S. L. Blatt, G. L. Marolt, and J. D. Goss.
WIDTHS OF LOW-LYING STATES OF ^{13}N AND THE QUESTION OF REACTION
DEPENDENCE.
Phys. Rev. C 10, 1319 (1974).
25. A. E. Vlieks, J. F. Morgan, and S. L. Blatt.
REACTION RATES OF INTEREST IN LATE STAGES OF STELLAR
NUCLEOSYNTHESIS.
Astrophys. J. 191, 699 (1974).
26. C. N. Chang, J. F. Morgan, and S. L. Blatt.
APPARENT DEPENDENCE OF α -PARTICLE INDUCED L-SUBSHELL
IONIZATION ON OUTER ELECTRON CONFIGURATIONS.
Phys. Lett. 49A, 365 (1974).
27. C. N. Chang, J. F. Morgan, and S. L. Blatt.
L-SUBSHELL IONIZATION BY PROTON AND ALPHA-PARTICLE
BOMBARDMENT OF Ta, Au, and Bi.
Phys. Rev. A 11, 607 (1975).
28. J. F. Morgan, C. N. Chang, and S. L. Blatt.
 $L_{\text{III}}/L_{\text{II}}$ IONIZATION CROSS SECTIONS AT LOW ENERGIES NEAR $Z=79$.
Phys. Rev. A 12, 1731 (1975).

29. S. L. Blatt.
CHARACTERISTICS OF RANDOM-SUM PEAKS IN NUCLEAR RADIATION SPECTRA.
Nucl. Instr. & Meth. 128, 277 (1975).
30. S. L. Blatt.
E.S.P.: TEACHING "SCIENTIFIC METHOD" BY COUNTER-EXAMPLE.
Am. J. Phys. 43, 1079 (1975).
31. J. J. Kent and S. L. Blatt.
ENERGY LEVELS OF ^{92}Nb AND ^{94}Tc FROM ^{92}Zr , $^{94}\text{Mo}(p,n\gamma)^{92}\text{Nb}$, ^{94}Tc .
Nucl. Phys. A225, 296 (1975).
32. J. F. Morgan, R. S. Sega, R. J. Schraeder, H. R. Suiter, and S. L. Blatt.
 ^3He - AND ^4He -INDUCED L-SUBSHELL IONIZATION OF GOLD: COULOMB DEFLECTION EFFECTS.
Phys. Rev. A 16, 2187 (1977).
33. K. J. Moon and S. L. Blatt.
A STUDY OF THE ENERGY LEVELS IN ^{16}O VIA $^{13}\text{C}(^3\text{He},\alpha\gamma)^{12}\text{C}$.
J. Korean Phys. Soc. 11, 6 (1978).
34. J. F. Morgan, S. L. Blatt, W. D. Ploughe, and M. A. Kovash.
L-SUBSHELL IONIZATION WITH HIGH-VELOCITY POSITIVE IONS.
Phys. Lett. 70A, 300 (1979).
35. M. A. Kovash and S. L. Blatt.
GAIN STABILIZATION OF SCINTILLATION AND CERENKOV SPECTROMETERS AT HIGH COUNTING RATES.
Nucl. Instr. & Meth. 163, 113 (1979).
36. M. A. Kovash, S. L. Blatt, R. N. Boyd, T. R. Donoghue, H. J. Hausman, and A. D. Bacher.
RADIATIVE CAPTURE OF INTERMEDIATE ENERGY PROTONS TO HIGH- LYING STATES IN LIGHT NUCLEI.
Phys. Rev. Lett. 42, 700 (1979).
37. R. N. Boyd, S. L. Blatt, T. R. Donoghue, L. J. Dries, H. J. Hausman, and H. R. Suiter.
SEARCH FOR FRACTIONALLY CHARGED IONS IN HELIUM GAS.
Phys. Rev. Lett. 43, 1288 (1979)
38. S. C. Ling, R. Berliner, S. L. Blatt, and O. F. Swenson.
A RUTHERFORD BACKSCATTERING STUDY OF THE STOICHIOMETRY OF THIN THALLIUM IODIDE FILMS.
Thin Solid Films 67, 77 (1980).

39. I. Linck, L. Kraus, and S. L. Blatt.
 RADIATIVE CAPTURE OF TRITONS BY ^{14}N AND ^{17}O LEVELS ABOVE
 19 MeV.
 Phys. Rev. C 21, 791 (1980).
40. R. N. Boyd, E. Sugarbaker, S. L. Blatt, T. R. Donoghue, H. J. Hausman, and
 S. E. Vigdor.
 THE $^{46,48}\text{Ti}(p, \alpha)^{43,45}\text{Sc}$ REACTION AT INTERMEDIATE ENERGY.
 Nucl. Phys. A372, 51 (1981).
41. H. R. Weller, H. Hasan, S. Manglos, G. Mitev, N. R. Roberson, S. L. Blatt,
 H. J. Hausman, R. G. Seyler, R. N. Boyd, T. R. Donoghue, M. A. Kovash,
 A. D. Bacher, and C. C. Foster.
 PROTON CAPTURE TO BOUND AND UNBOUND STATES OF ^{12}C .
 Phys. Rev. C 25, 2921 (1982).
42. M. Wiescher, R. N. Boyd, S. L. Blatt, L. J. Rybarczyk, J. A. Spizuoco, R. E. Azuma, T. H.
 Clifford, J. D. King, J. Görres, C. Rolfs, and A. E. Vlieks.
 ^{11}C LEVEL STRUCTURE VIA THE $^{10}\text{B}(p, \gamma)$ REACTION.
 Phys. Rev. C 28, 1431 (1983).
43. S. L. Blatt, H. J. Hausman, L. G. Arnold, R. G. Seyler, R. N. Boyd, T. R. Donoghue, P.
 Koncz, M. A. Kovash, A. D. Bacher, and C. C. Foster.
 PROTON RADIATIVE CAPTURE INTO CLOSED-SHELL AND CLOSED- SHELL-
 PLUS-ONE-PROTON NUCLEI.
 Phys. Rev. C 30, 423 (1984).
44. H. J. Hausman, S. L. Blatt, R. N. Boyd, T. R. Donoghue, R. G. Seyler,
 D. G. Marchlenski, T. W. Rackers, P. Schmalbrock, L. G. Arnold, M. A. Kovash,
 A. D. Bacher, and C. C. Foster.
 EVIDENCE FOR MULTI-STEP PROCESSES IN PROTON CAPTURE
 REACTIONS.
 Phys. Rev. C 31, 660 (1985).
45. J. C. Brown, R. G. Seyler, T. L. Tsin, and S. L. Blatt.
 CAPTURE OF POLARIZED PROTONS BY ^{12}C NEAR 1.7 MeV AND THE
 INTERFERENCE OF COMPOUND AND DIRECT REACTION MECHANISMS.
 Phys. Rev. C 31, 1607 (1985).
46. H. J. Hausman, S. L. Blatt, T. R. Donoghue, J. Kalen, W. Kim, D. G. Marchlenski, T. W.
 Rackers, P. Schmalbrock, M. A. Kovash, and A. D. Bacher.
 GROUND-STATE PROTON CAPTURE REACTIONS FROM 20 TO 100 MeV. Phys.
 Rev. C 37, 503 (1988).

47. T. W. Rackers, S. L. Blatt, T. R. Donoghue, H. J. Hausman, J. Kalen, W. Kim, D. G. Marchlenski, M. Wiescher, M. A. Kovash, and A. D. Bacher.

PROTON RADIATIVE CAPTURE BY ^{15}N , ^{16}O , ^{27}Al , AND ^{28}Si .
Phys. Rev. C 37, 1759 (1988).

48. J. D. Kalen, H. J. Hausman, A. Abduljalil, W. Kim, D. G. Marchlenski, J. P. McDermott, T. W. Rackers, S. L. Blatt, M. A. Kovash, and A. D. Bacher.

RADIATIVE PROTON CAPTURE TO EXCITED STATES IN ^{16}O AT INTERMEDIATE ENERGIES.
Phys. Rev. C 39, 340 (1989).

49. M. A. Kovash, B. Andersen-Pugh, M. T. McEllistrem, J. K. Ternes, J. H. Trice, S. L. Blatt, H. J. Hausman, D. G. Marchlenski, and A. D. Bacher.

QUADRUPOLE AND OCTOPOLE RADIATION FROM ^{16}O NEAR 39 MeV EXCITATION.
Phys. Rev. C 40, R1093 (1989).

50. S. Leslie Blatt and Harvey Gould.

RECENT FRACTAL AND CHAOS SOFTWARE RELEASES HINT AT FUTURE EDUCATIONAL POTENTIAL (software review).
Computers in Physics 6, 702 (1992).

III. CONFERENCE PROCEEDINGS AND INVITED PAPERS PRESENTED AT PROFESSIONAL MEETINGS

1. S. L. Blatt, D. B. Nichols, and J. W. D. Sinclair.
THE OSU-IBM 1800 ON-LINE SYSTEM.

Proceedings of the Skytop Conference on Computer Systems in Experimental Nuclear Physics, USAEC CONF-690301. Columbia University, NY (1969), p.326.

2. D. R. Parsignault, H. H. Wilson, R. Mineski, and S. L. Blatt.
A PROMPT GAMMA-RAY COAL ANALYSIS SYSTEM.

Proceedings of the American Nuclear Society Topical Meeting, CONF- 710402, Vol. 3 (1971), p. IV-40.

3. S. L. Blatt, M. Suffert, A. Degré, and M. Schaeffer.

INVESTIGATION OF THE RADIATIVE CAPTURE OF TRITONS BY ^7Li .
Photonuclear Reactions and Applications, B. Berman, ed., Lawrence Livermore Laboratory, Livermore, CA, (1973), Vol. II, p. 927.

4. I. Linck, L. Kraus, and S. L. Blatt.

OBSERVATION OF HIGH-LYING LEVELS IN ^{17}O VIA RADIATIVE CAPTURE OF TRITONS BY ^{14}N .
Ibid., Vol. II, p. 931.

5. R. E. Maute, S. L. Blatt, and D. P. D'Amato.
A STUDY OF THE $^{11}\text{B}(^3\text{He}, \gamma)$ REACTION FROM $E(^3\text{He})=1.5$ TO 5.8 MeV.
Ibid., Vol. II, p. 933.

6. M. Schaeffer, A. Degré, S. L. Blatt, and M. Suffert.
RADIATIVE CAPTURE OF TRITONS BY EVEN-EVEN LIGHT NUCLEI IN THE
GIANT RESONANCE ENERGY REGION.
Proceedings of the International Conference on Nuclear Physics, Munich, J. de Boer, and
H. J. Mang, ed. (1974), Vol. 1, p. 642.

7. S. L. Blatt, M. A. Kovash, T. R. Donoghue, R. N. Boyd, H. J. Hausman,
A. D. Bacher, and C. C. Foster.
INVESTIGATION OF HIGH-LYING-STATE RADIATIVE PROTON
CAPTURE AT INTERMEDIATE ENERGIES.
*Proceedings of the Eighth International Conference on High-Energy Physics and Nuclear
Structure*, Vancouver (1979), p.99.

8. S. L. Blatt.
PROTON CAPTURE AT INTERMEDIATE ENERGIES.
Invited paper, Gordon Research Conference on Photonuclear Physics, Tilton, NH (1979).

9. S. L. Blatt.
CHARACTERISTIC FEATURES OF RADIATIVE PROTON CAPTURE
REACTIONS AT INTERMEDIATE ENERGIES.
Nuclear Structure Studies with Intermediate Energy Probes,
LA-8303-C, Los Alamos, NM (1980), p. 90.

10. S. L. Blatt, M. A. Kovash, H. J. Hausman, T. R. Donoghue, R. N. Boyd,
A. D. Bacher, and C. C. Foster.
THE SEARCH FOR SECOND-HARMONIC GIANT RESONANCES IN
RADIATIVE PROTON CAPTURE.
Giant Multipole Resonances, F. E. Bertrand, ed., Harwood, Chur, Switzerland (1980), p.
435.

11. R. N. Boyd, S. L. Blatt, T. R. Donoghue, H. J. Hausman, E. Sugarbaker, and
S. E. Vigdor.
THE $^{46,48}\text{Ti}(p_{\text{pol}}, \alpha)^{43,45}\text{Sc}$ REACTION.
*Proceedings of the Fifth International Symposium on Polarization Phenomena in Nuclear
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New York (1981), p. 742.

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Invited paper, Washington, DC, meeting of American Physical Society, April 28 -- May 1, 1980. Abstract in *Bull. Am. Phys. Soc.* 25, 552 (1980).
13. S. L. Blatt.
RADIATIVE PROTON CAPTURE TO HIGHLY-EXCITED STATES: RECENT RESULTS OF THE OSU/IUCF PROGRAM.
Proceedings of the International Conference on Nuclear Structure, Amsterdam (1982), p. 86.
14. H. J. Hausman, S. L. Blatt, R. N. Boyd, T. R. Donoghue, L. G. Arnold, M. A. Kovash, D. Marchlenski, T. W. Rackers, M. Wiescher, A. D. Bacher, and C. C. Foster.
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Proceedings of the International Conference on Nuclear Physics, Florence, Tipografia Compositori, Bologna (1983), Vol. 1, p. 337.
15. S. L. Blatt.
RADIATIVE CAPTURE REACTIONS ABOVE THE GIANT DIPOLE REGION.
Invited paper, Gordon Research Conference on Nuclear Structure Physics, Tilton, NH (1983).
16. S. L. Blatt.
EXPERIENCE WITH LARGE NaI(Tl) DETECTORS AT INTERMEDIATE ENERGIES.
Invited talk, Radiative Capture Workshop, Chapel Hill, NC (1984)
17. S. L. Blatt.
MEDIUM ENERGY PROTON AND HELIUM-3 CAPTURE IN LIGHT NUCLEI.
Capture Gamma Ray Spectroscopy and Related Topics, S. Raman, ed., American Institute of Physics, New York (1985), p. 570.
18. T. W. Rackers, H. J. Hausman, S. L. Blatt, T. R. Donoghue, W. Kim, D. G. Marchlenski, P. Schmalbrock, W. Wiescher, M. A. Kovash, A. D. Bacher, and C. C. Foster.
ANALYZING POWER MEASUREMENTS IN PROTON CAPTURE REACTIONS.
J. Phys. Soc. Japan (Supplement) 55, 1024 (1986)
19. S. Leslie Blatt.
WORKSHOP ON HANDS-ON SCIENCE FOR ELEMENTARY SCHOOL TEACHERS.
Conference on "Communities Communicating for Educational Excellence," 1994. Sponsored by Shore Educational Collaborative, Medford, MA.

20. S. Leslie Blatt.

THE DISCOVERING PHYSICS PROJECT.

Poster and "hands-on" presentation at the "Project Impact" conference sponsored by the National Science Foundation, 1994, Crystal City, VA.

IV. CONTRIBUTED NUCLEAR PHYSICS PAPERS AT PROFESSIONAL MEETINGS

(Abstracts published in the *Bulletin of the American Physical Society* are referenced as "B.A.P.S.")

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2. S. L. Blatt and W. E. Meyerhof.

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B.A.P.S. 7, 624 (1962).

3. S. L. Blatt and D. Kohler.

RADIATIVE CAPTURE OF ^3He BY ^9Be .
B.A.P.S. 8, 290 (1963).

4. P. Paul, S. L. Blatt, and D. Kohler.

REACTIONS $^7\text{Li}(^3\text{He}, \gamma)^{10}\text{B}$ AND $^7\text{Li}(^3\text{He}, \gamma)^6\text{Li}$.
B.A.P.S. 9, 391 (1964).

5. S. L. Blatt, S. C. Ling, and A. M. Young.

INVESTIGATION OF THE REACTION $^7\text{Li}(^3\text{He}, \gamma)^{10}\text{B}$ ABOVE 3 MeV.
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6. A. M. Young, S. C. Ling, and S. L. Blatt.

DETECTION SYSTEM FOR HIGH-ENERGY CAPTURE RADIATION.
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7. S. C. Ling, A. M. Young, and S. L. Blatt.

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B.A.P.S. 12 212 (1967).

8. S. L. Blatt.

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9. S. L. Blatt, D. B. Nichols, R. G. Arns, J. D. Goss, and H. J. Hausman.

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11. K. J. Moon, C. D. Porterfield, S. C. Ling, A. M. Young, and S. L. Blatt.
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B.A.P.S. 13, 1387 (1968).
12. J. D. Goss, D. R. Parsignault, F. L. Riffle, C. D. Porterfield, and S. L. Blatt.
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14. S. C. Ling, S. L. Blatt, K. J. Moon, C. D. Porterfield, and A. M. Young.
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B.A.P.S. 14, 1213 (1969).
15. E. M. Diener, P. Paul, J. F. Amann, and S. L. Blatt.
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21. J. J. Kent and S. L. Blatt.
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B.A.P.S. 17, 443 (1972)
26. J. W. D. Sinclair, J. W. Smith, and S. L. Blatt.
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27. C. N. Chang, J. J. Kent, J. F. Morgan, and S. L. Blatt.
A RESIDUAL RADIOACTIVITY MEASUREMENT OF THE REACTION
 $^{48}\text{Ti}(\alpha, n)^{51}\text{Cr}$.
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28. A. E. Vlieks, J. F. Morgan, and S. L. Blatt.
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NUCLEI.
B.A.P.S. 18, 652 (1973).
29. S. L. Blatt, G. L. Marolt, and J. D. Goss.
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30. A. E. Vlieks, J. F. Morgan, and S. L. Blatt.
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NUCLEOSYNTHESIS.
B.A.P.S. 18, 1384 (1973).

31. C. N. Chang, J. F. Morgan, and S. L. Blatt.
L-SUBSHELL IONIZATION BY PROTON AND ALPHA-PARTICLE
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IONIZATION RATIOS.
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34. T. L. Tsin, S. L. Blatt, T. R. Donoghue, L. J. Dries, and R. G. Seyler.
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ENERGIES.
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35. S. L. Blatt.
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Conference on Radiative Capture Reaction Studies with Large-Volume Detectors,
Stanford, CA (August, 1976).
36. T. L. Tsin, R. G. Seyler, and S. L. Blatt.
A RESONANT + DIRECT CAPTURE MODEL FOR $^{12}\text{C}(p_{\text{pol}}, \gamma)^{13}\text{N}$.
B.A.P.S. 22, 612 (1977).
37. J. F. Morgan, S. L. Blatt, and H. R. Suiter.
 ^3He AND ^4He INDUCED L-SUBSHELL IONIZATION OF GOLD.
B.A.P.S. 22, 655 (1977).
38. M. A. Kovash and S. L. Blatt.
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39. J. F. Morgan, S. L. Blatt, M. A. Kovash, and W. D. Ploughe.
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40. M. A. Kovash and S. L. Blatt.
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B.A.P.S. 23, 602 (1978).

41. M. A. Kovash, S. L. Blatt, R. N. Boyd, T. R. Donoghue, H. J. Hausman, and A. D. Bacher.
RADIATIVE CAPTURE OF PROTONS AT INTERMEDIATE ENERGIES.
B.A.P.S. 23, 926 (1978).
44. R. N. Boyd, S. L. Blatt, T. R. Donoghue, H. J. Hausman, S. Vigdor, P. Schwandt, E. Sugarbaker, and H. W. Fulbright.
STUDY OF THE $^{46,48}\text{Ti}(p_{\text{pol}}, \alpha)$ REACTION.
B.A.P.S. 24, 630 (1979).
43. R. N. Boyd, S. L. Blatt, T. R. Donoghue, L. J. Dries, H. J. Hausman, and H. R. Suiter.
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B.A.P.S. 24, 650 (1979).
44. S. L. Blatt, M. A. Kovash, T. R. Donoghue, R. N. Boyd, H. J. Hausman, and A. D. Bacher.
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B.A.P.S. 24, 843 (1979).
45. S. Manglos, H. R. Weller, N. R. Roberson, D. R. Tilley, S. A. Wender, and S. L. Blatt.
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46. S. L. Blatt, T. R. Donoghue, M. A. Kovash, R. N. Boyd, H. J. Hausman, A. D. Bacher, and C. C. Foster.
RADIATIVE CAPTURE OF 28.5-MeV PROTONS INTO FINAL STATES OF ^{12}C AND ^{13}N .
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47. S. L. Blatt, H. J. Hausman, T. R. Donoghue, R. N. Boyd, P. Koncz, M. A. Kovash, A. D. Bacher, and C. C. Foster.
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48. M. Wiescher, R. N. Boyd, S. L. Blatt, L. J. Rybarcyk, R. E. Azuma, T. H. Clifford, J. D. King, C. Rolfs, and R. Görres.
THE $^{10}\text{B}(p, \gamma)^{11}\text{C}$ REACTION.
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49. D. Marchlenski, S. L. Blatt, H. J. Hausman, T. R. Donoghue, T. Rackers, M. Wiescher, M. A. Kovash, A. D. Bacher, and C. C. Foster.
COMPARISON OF ^3He AND PROTON CAPTURE INTO ^{12}C AND ^{16}O .
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50. T. Rackers, S. L. Blatt, H. J. Hausman, T. R. Donoghue, D. G. Marchlenski, M. Wiescher, M. A. Kovash, A. D. Bacher, and C. C. Foster.
THE REACTION PAIRS $^{15}\text{N}(p, \gamma)^{16}\text{O}$ / $^{16}\text{O}(p, \gamma)^{17}\text{F}$ AND $^{27}\text{Al}(p, \gamma)^{28}\text{Si}$ / $^{28}\text{Si}(p, \gamma)^{29}\text{P}$.
B.A.P.S. 28, 650 (1983).
51. M. A. Kovash, J. M. Finn, R. Lourie, P. Ulmer, J. Wiggins, S. L. Blatt, T. R. Donoghue, H. J. Hausman, D. Marchlenski, A. D. Bacher, C. C. Foster, and D. L. Friesel.
SPIN-FLIP AND POLARIZATION - ANALYZING POWER DIFFERENCE MEASUREMENTS USING THE $^{12}\text{C}(p_{\text{pol}}, p' \gamma)$ REACTION AT 150 MeV.
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52. D. G. Marchlenski, S. L. Blatt, H. J. Hausman, R. N. Boyd, T. R. Donoghue, S. Jensen, P. Koncz, M. A. Kovash, A. D. Bacher, and C. C. Foster.
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B.A.P.S. 28, 964 (1983).
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B.A.P.S. 28, 965 (1983).
54. M. A. Kovash, S. Hicks, M. T. McEllistrem, A. D. Bacher, D. L. Friesel, C. C. Foster, C. Olmer, S. L. Blatt, T. R. Donoghue, H. J. Hausman, D. G. Marchlenski, J. M. Finn, R. W. Lourie, B. Pugh, P. Ulmer, and J. Wiggins.
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B.A.P.S. 29, 627 (1984).
55. S. M. Jensen, S. L. Blatt, H. J. Hausman, R. N. Boyd, T. R. Donoghue, R. G. Seyler, D. G. Marchlenski, T. W. Rackers, P. Schmalbrock, M. A. Kovash, A. D. Bacher, and C. C. Foster.
SPECTROSCOPIC FACTORS FROM PROTON CAPTURE AT INTERMEDIATE ENERGIES.
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56. D. G. Marchlenski, S. L. Blatt, H. J. Hausman, T. R. Donoghue, T. W. Rackers, P. Schmalbrock, V. Wijekumar, W. Kim, S. M. Jensen, A. D. Bacher, and C. C. Foster.
RADIATIVE CAPTURE OF ^3He AT INTERMEDIATE ENERGIES.
B.A.P.S. 29, 1051 (1984).

57. J. H. Trice, M. A. Kovash, Z. Gacsi, M. T. McEllistrem, B. Pugh, J. L. Weil, S. L. Blatt, T. R. Donoghue, H. J. Hausman, D. G. Marchlenski, and A. D. Bacher.
IN-PLANE GAMMA-RAY COINCIDENCE CORRELATIONS FOR THE
 $^{12}\text{C}(p_{\text{pol}}, p' \gamma)$ REACTION TO THE 1^+ (15.11 MeV) STATE AT $E_p = 150$ MeV.
B.A.P.S. 31, 822 (1986).
58. H. J. Hausman, S. L. Blatt, T. R. Donoghue, J. Kalen, W. Kim, D. G. Marchlenski, T. W. Rackers, P. Schmalbrock, J. McDermott, M. A. Kovash, and A. D. Bacher.
PROTON CAPTURE REACTIONS FROM 20 TO 100 MeV.
Sixth International Symposium on Capture Gamma-Ray Spectroscopy,
Leuven, Belgium (1987).
59. M. A. Kovash, B. Anderson-Pugh, M. T. McEllistrem, J. Trice, S. L. Blatt, H. J. Hausman, D. Marchlenski, and A. D. Bacher.
QUADRUPOLE RADIATION FROM ^{16}O NEAR 35 MeV EXCITATION.
B.A.P.S. 32, 1573 (1987).
60. J. D. Kalen, H. J. Hausman, D. G. Marchlenski, J. P. McDermott, S. L. Blatt, W. Kim, M. A. Kovash, and A. D. Bacher.
RADIATIVE PROTON CAPTURE REACTION $^{15}\text{N}(p, \gamma)^{16}\text{O}$.
B.A.P.S. 33, 1254 (1988).
61. D. G. Marchlenski, H. J. Hausman, J. Kalen, T. W. Rackers, S. L. Blatt, W. Kim, and A. D. Bacher.
EVIDENCE FOR GIANT RESONANCES BUILT UPON EXCITED STATES
IN ^3He CAPTURE.
B.A.P.S. 33, 1253 (1988).
62. S. L. Blatt, A. Abduljalil, D. G. Marchlenski, H. J. Hausman, J. D. Kalen, W. Kim, H. R. Weller, and G. Feldman.
GIANT RESONANCES ON EXCITED STATES IN ^{15}O OBSERVED IN ^3He CAPTURE.
B.A.P.S. 33, 1575 (1988).

V. SCIENCE EDUCATION PRESENTATIONS

1. S. Leslie Blatt, Harvey Gould, Mauri Gould, Paul Nakroshis, Charles Barton, and Christopher Landee.
THE *DISCOVERING PHYSICS* PROJECT: NEW APPROACHES TO SCIENCE
TEACHING.
Fifteenth Annual Ethnography in Education Research Forum, Univ. of
Pennsylvania, February 18-20, 1994, and *Bull. Am. Phys. Soc.* 39, 1171 [1994].

2. Paul Nakroshis, Charles Barton, and S. Leslie Blatt.
SCIENCE WORKSHOPS FOR TEACHERS: BUILDING BACKGROUND AND CONFIDENCE.
Fifteenth Annual Ethnography in Education Research Forum, Univ. of Pennsylvania, February 18-20, 1994, and *Bull. Am. Phys. Soc.* 39, 1171 [1994].
3. S. Leslie Blatt.
WORKSHOP ON HANDS-ON SCIENCE FOR ELEMENTARY SCHOOL TEACHERS.
Conference on "Communities Communicating for Educational Excellence," April 12, 1994. Sponsored by Shore Educational Collaborative.
4. S. Leslie Blatt.
THE DISCOVERING PHYSICS PROJECT.
Poster and "hands-on" presentation at the "Project Impact" conference sponsored by the National Science Foundation, May 31 – June 3, 1994, Crystal City, Virginia.
5. Paul Nakroshis, S. Leslie Blatt, Christopher Landee, and Harvey Gould.
ORDER, DISORDER, AND CHAOS: A NEW COURSE FOR NON-SCIENCE MAJORS.
American Physical Society meeting, April, 1995. (*B.A.P.S.* 40, 967 [1995].)
6. S. Leslie Blatt.
COMPLEX INSTRUCTION IN AN ADULT CONTEXT.
Invited presentation, International Conference on Cooperative Learning, July, 1996, Columbus, Ohio.
7. S. Leslie Blatt.
THE 'WAYS OF KNOWING' COURSE PHILOSOPHY: A REAL HANDS-ON DEMONSTRATION
Panel contribution, state meeting on university/school collaborations, Sturbridge, MA, November 14, 1996.
8. S. Leslie Blatt and Jane Z. Murphy
ASSESSMENT OF STUDENTS IN AN ACTIVE LEARNING CONTEXT.
Workshop for Shore Educational Collaborative. Everett, MA, November 20, 1996.
9. S. Leslie Blatt.
HANDS-ON/MINDS-ON (a panel contribution).
Inter-state Conference on Professional Development Schools/Teacher Education and School Reform, Worcester, MA, May 9-10, 1997.

10. S. Leslie Blatt.
Mass. Dept. of Education Conference on “Integrating the Curriculum Frameworks and the Principles of Effective Teaching into Teacher Education”: Presentation on the *Ways of Knowing* course philosophy. Mt. Holyoke College, Oct. 28, 1997.
11. S. Leslie Blatt.
GETTING OUR HANDS ON SCIENCE IN MALDEN.
Malden Public Schools Professional Day workshop presentation. (Designed to stimulate discussion of possible extensions of the elementary school science program into the middle schools.) October 31, 1997.
12. S. Leslie Blatt.
HANDS-ON SCIENCE TEACHING.
Worcester Professional Development Schools teacher's group, November 3, 1997.
13. S. Leslie Blatt.
COOPERATIVE SCIENCE LEARNING TECHNIQUES
New England Science Center. Professional development workshop for the museum’s program staff, Jan. 21, 1998.
14. S. Leslie Blatt.
ALIGNING PRE-SERVICE TEACHER EDUCATION WITH THE STATE FRAMEWORKS
Massachusetts Department of Education Professional Development Schools program, Sturbridge, MA, February 4, 1998.
15. S. Leslie Blatt.
Robert Goddard tribute (part of City of Worcester's 150th anniversary celebration). Children and staff of the Goddard School of Science and Technology collaborated with members of the Clark Physics Department to re-enact Goddard's first successful liquid-fueled rocket launch. I helped to organize the program and provided a historical introduction at the public presentation. February 28, 1998.
16. Roy S. Andersen and S. Leslie Blatt
ARTHUR GORDON WEBSTER, FOUNDER OF THE AMERICAN PHYSICAL SOCIETY.
American Physical Society centennial meeting, Atlanta, GA, March 22, 1998.
17. Tom Del Prete, Tom Berninghausen, S. Leslie Blatt, Marion Guerra, and Maureen Reddy.
LEARNING TO LEARN TOGETHER.
National Professional Development School conference “Charting a New Course,” Towson University, Baltimore, Maryland, October 16, 1998.
18. S. Leslie Blatt.
THE SCIENCE BEHIND HANDS-ON COOPERATIVE SCIENCE EDUCATION.
Malden, MA, Public Schools Professional Day, October 30, 1998.

19. S. Leslie Blatt.
TEACHERS TEACHING SCIENCE AND TEACHING TEACHERS SCIENCE.
Panel presentation on the occasion of the inauguration of President John Bassett.
Clark University, March 6, 2001.
20. S. Leslie Blatt.
AT THE CROSSROADS OF ART AND SCIENCE: A NEW COURSE FOR
UNIVERSITY NON-SCIENCE MAJORS.
New England Section meeting of the American Physical Society and the American
Association of Physics Teachers, Exeter, NH, March 26, 2004.
21. S. Leslie Blatt.
A PHYSICIST'S ODYSSEY IN THE PUBLIC SCHOOLS.
New England Section meeting of the American Physical Society and the American
Association of Physics Teachers, Exeter, NH, March 27, 2004.

VI. GRADUATE ADVISEES

1. Alan. M. Young, M. S., 1967; Ph. D., 1970.
A STUDY OF THE REACTION $T(^3\text{He}, \gamma)^6\text{Li}$ FROM 0.5 TO 20 MeV.
2. Samuel C. Ling, Ph. D., 1969.
A STUDY OF THE EXCITED STATES BETWEEN 18 AND 22 MeV IN ^{10}B .
3. Kuk Jin Moon, M. S., 1967; Ph. D., 1969.
HIGHLY EXCITED STATES OF ^{12}C AND ^{16}O FROM ^3He CAPTURE STUDIES.
4. John D. Goss, Ph. D., 1970.
MEASUREMENT AND COMPOUND NUCLEUS ANALYSIS OF THE ELASTIC
SCATTERING OF ALPHA PARTICLES BY BERYLLIUM-9
5. Stephen Husted, M. S., 1971.
PARTICLE IDENTIFICATION BY AN ON-LINE COMPUTER METHOD.
6. Donald C. Bulthaup, Ph. D., 1972.
GAMMA DECAY OF ANALOG RESONANCES IN ^{65}Ga , ^{67}Ga , AND ^{69}Ga .
7. Donald P. D'Amato, M. S., 1969; Ph. D., 1972.
SEARCH FOR LOW-LYING LEVELS OF THE GIANT DIPOLE RESONANCE
IN ^{40}Ca BY THE $^{39}\text{K}(p, \gamma)$ REACTION.
8. Arnold E. Vlieks, M. S., 1971; Ph. D., 1973.
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