

Charles D. Spencer

Business Address:

Department of Physics
Ithaca College
Ithaca, NY 14850

Home Address:

9 Penny Lane
Ithaca, New York 14850

Education:

A.B. 1965 — Berea College (physics)
Ph.D. 1972 — University of North Carolina (experimental solid state physics)

Professional History:

1965-72 Graduate Teaching and Research Assistant, University of North Carolina
1972-73 Instructor, University of North Carolina
1973-80 Assistant Professor, Ithaca College
1980-82 Computing Consultant and Assistant Professor, Ithaca College
1982-87 Assistant Professor, Ithaca College
1987-90 Associate Professor, Ithaca College
1990- Professor, Ithaca College
1993-00 Department Chair, Physics

Publications:

Book: 1; Software Program: 1; Refereed papers: 22; Invited papers and workshops: 7; Contributed Papers: 7.

Grants:

1976	NSF SSTP	\$ 8,940	
1977	NSF SSTP	10,180	
1978	NSF SSTP	18,260	
1981-84	NSF LOCI	20,750	(collaboration with P. Seligmann)
1982-85	NSF DISE	42,378	(collaboration with P. Smith, P. Seligmann)
1988-92	NSF TPE	423,178	(collaboration with S. Thompson, P. Seligmann, M. Robinson, F. Darrow, J. Schwartz)
1993-97	NSF TPE	1,039,738	(collaboration with P. Seligmann, M. Robinson, seven teachers)

Memberships and Honors:

Phi Kappa Phi
Sigma Xi
Sigma Pi Sigma
American Association of Physics Teachers
Ithaca College Dana Teaching Awards - 1981, 1986

Professional Interests:

Development of computer data acquisition systems; development of scientific graphics software; instruction in digital electronics and microcomputers; instruction in the use of computers for data acquisition; general laboratory instruction.

Publications

Book

Digital Design for Computer Data Acquisition, Cambridge University Press, New York, 1990.

Software

Physics Plot, Physics Academic Software, Raleigh, 2000.

Refereed Papers

"A Universal Serial Bus Interface for Electronics Projects and Instruments" (with T. Z. Fullem) *Am. J. Phys.* **70**, 972 (2002).

"A Capable Voltage Logger for the PCI Bus," *Am. J. Phys.* **68**, 966 (2000).

"Hardware and Software for a Pulse Height Analyzer Linked to a Personal Computer" (with S. Paul), *Comp. in Phys* **11**, 101 (1997).

"An Independent Freshman Laboratory" (with P. Seligmann), *Phys. Teach.* **30**, 310 (1992).

"Parallel I/O Ports for the IBM Micro Channel" (with E. J. Herrmann), *Comp. in Phys.* **5**, 488 (1991).

"General Purpose Measurement Interface for Physics Experiments and Instruments" (with P. Seligmann and D.A. Briotta), *Comp. in Phys.* **1**, 59 (1987).

"The Appropriate Use of Computers in the Undergraduate Physics Lab" (with D.A. Briotta, P.A. Smith and P. Seligmann), *Am. J. Phys.* **55**, 891 (1987).

"Microcomputers as Digital Electronics" (with P. Seligmann), *Am. J. Phys.* **54**, 411 (1986).

"A Physics-computing Major" (with P.A. Smith and P. Seligmann), *Am. J. Phys.* **53**, 405 (1985).

"Two Freshman Courses with Introduce Digital Electronics, Programming and Interfacing" (with P. Seligmann), *Am. J. Phys.* **53**, 343 (1985).

"A Microcomputer Listens to the Coefficient of Restitution" (with P.A. Smith and D.E. Jones), *Am. J. Phys.* **49**, 136 (1981).

"Mossbauer Study of Iron-Cobalt-Rhodium Spinel" (with P.A. Smith, C.M. Karnes and W.M. Shepard), *J. Phys. Chem. Solids* **41**, 1079 (1980).

"A Multichannel Analyzer Built from a Microcomputer" (with P. Mueller), *Am. J. Phys.* **47**, 447 (1979).

" Co^{57} and Fe^{57} Mossbauer Studies of the Spinel FeCo_2O_4 and $\text{Fe}_{.5}\text{Co}_{2.5}\text{O}_4$ " (with P.A. Smith and R.P. Stillwell), *J. Phys. Chem. Solids* **39**, 107 (1978).

"Evaluation of Ligand Field Stabilization in Spinel Using Mossbauer Determined Cation Distributions" (with P.A. Smith and R.P. Stillwell), *J. Phys. Chem. Solids* **39**, 103 (1978).

"Solution Properties of Tetrakis - (4-N-metyyl) pyridylprophineiron (III)" (with R.P. Paster-nack, H. Lee and R. Malek), *J. Inorg. Nucl. Chem.* **39**, 1865 (1977).

"The Mossbauer Effect for Fe^{57} and Co^{57} in TiO_2 (Rutile)" (with T.R. Sandin and D. Schroeer), *Phys. Rev.* **B13**, 4784 (1976).

"Mossbauer Study of Fe^{57} and Co^{57} in $\text{Co}_{1+x}\text{V}_{2-x}\text{O}_4$ " (with J.D. Lee and D. Schroeer), *J. Phys. Chem Solids* **37**, 747 (1976).

"A Critical Reading List for Teachers of Physics and Society Courses" (with D. Schroerer), *Am. J. Phys.* **44**, 139 (1976).

"Teaching a Physics and Society Course" (with D. Schroerer), *Am. J. Phys.* **44**, 135 (1976).

"Mossbauer Study of Several Cobalt Spinels Using Co^{57} and Fe^{57} " (with D. Schroerer), *Phys. Rev.* **B9**, 3685 (1974).

"Uses of the Mossbauer Effect in Radiation Damage Studies" (with D. Schroerer and R.L. Lamb), *Mossbauer Methodology Vol. 7*, ed. I.J. Gruverman (Plenum Press, New York, 1971)

Invited Papers and Workshops

"Parallel Port Interfacing on the IBM PC," Day long workshop, American Association of Physics Teachers, Cornell University, Ithaca, NY, 21 June 1988.

"What Hardware To Use," Technical Education Research Centers, Tufts University, Medford, MA, 4 June 1985.

"A Time-based Data Acquisition System," American Physical Society and American Association of Physics Teachers, San Antonio, TX, 30 January 1984.

"Microcomputer Activities in the Ithaca College Physics Department," invited article in *Hands On* **7** (1979).

"Microcomputers in the Undergraduate Physics Laboratory," New York Section, American Association of Physics Teachers, Rochester, NY, 6 October 1979.

"An Introduction to Mossbauer Spectroscopy," Berea College, Berea, KY, 16 March 1977.

"A National Purpose for Physics and Society Courses," American Physical Society and American Association of Physics Teachers, Anaheim, CA, 30 January 1975.

Contributed Papers

"A Workshop for Secondary School Teachers on Using Computers for Data Collection in Instructional Laboratories" (with P. Seligmann), Conference on Computers in Physics Instruction, Raleigh, NC, 4 August 1988. Proceedings published in *Computers in Physics Instruction*, p-p 507-508 (Addison-Wesley, 1990).

"A Parallel Approach to Data Acquisition and Control," Conference on Computers in Physics Instruction, Raleigh, NC, 2 August 1988. Proceedings published in *Computers in Physics Instruction*, p-p 231-233 (Addison-Wesley, 1990).

"A Freshman Laboratory Course for Physics Majors" (with P. Seligmann), *AAPT Ann.* **18**, 84 (1988).

"Experiments Using a Microcomputer-based MCA Interfaced to a Large Computer," *AAPT Ann.* **10**, 93 (1980).

"Mossbauer Study of Several Cobalt Spinels" (with D. Schroerer), *Bull. Am. Phys. Soc.* **18**, 85 (1973).

"Mossbauer Effect Radiation Damage Studies in Co_3O_4 " (with D. Schroerer), *Bull. Am. Phys. Soc.* **16**, 24 (1971).

"Mossbauer Effect for Fe^{57} in Rutile" (with T.R. Sandin and D. Schroerer), *Bull. Am. Phys. Soc.* **16**, 25 (1971).