

# RICHARD MERRILL WHEELER

## OFFICE

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1412 Magruder Court  
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## PRESENT POSITION

Emeritus Professor of Physics and Chairman of the Physics Department  
Former Visiting Professor of Physics, Cornell University Summer School

## PERSONAL DATA

Date of Birth: 10 November 1942  
Place of Birth: Washington, D.C.  
Marital Status: Married, 1 child  
Citizenship: U.S.A.

## EDUCATION

Ph.D. Physics, Johns Hopkins University, Baltimore, Maryland, 1969.  
Dissertation: Studies of the First  $2^+$  States of  $\text{Sm}^{154}$  and  $\text{U}^{238}$  Using the Mössbauer Effect Following Coulomb  
Excitation, unpublished  
B.A. Physics, Johns Hopkins University, Baltimore, Maryland, 1964, with general honors.

## RESEARCH INTERESTS

Ion-Atom Interactions, Inner Shell X-Ray Production Cross-Sections  
X-Ray Fluorescence with Synchrotron Radiation  
Proton Induced X-Ray Emission Techniques  
Trace Element Analysis in Medical Physics  
VandeGraaff Accelerator Techniques  
Ion Impact Perturbed Angular Correlations  
Nuclear g-Factors of Deformed Nuclei  
Mössbauer Effect Spectrometry Following Coulomb Excitation  
Physics Teacher Education

## WORK EXPERIENCE

1995-2008: Chairman of the Physics Department, SUNY College at Cortland  
1982-2008: Professor of Physics, SUNY College at Cortland  
1990-2009: Visiting Professor of Physics, Cornell University Summer School  
1998-Fall: Acting Director of the Center for the Advancement of Technology in Education  
1990-1997: Coordinator of the Computer Applications Minor, SUNY College at Cortland  
1987 Fall: Acting Chairman of the Physics Department, SUNY College at Cortland  
1976-1982: Associate Professor of Physics, SUNY College at Cortland  
1973-1976: Assistant Professor of Physics, SUNY College at Cortland  
1972-1973: Postdoctoral Fellow, T. W. Bonner Nuclear Structure Laboratory, Rice University

1970-1972: Postdoctoral Fellow, Tandem VandeGraaff Laboratory, Purdue University  
1972 Fall: Instructor, Purdue University  
1966-1969: Research Assistant, VandeGraaff Laboratory, Johns Hopkins University  
1964-1968: Assistant Instructor, Johns Hopkins University

## **PROFESSIONAL ACTIVITIES**

1983-Present: Visiting Scientist, University of North Texas  
1964-2000: Member, American Physical Society  
1985-1996: Visiting Scientist, National Synchrotron Light Source, Brookhaven National Laboratory  
1987-1996: User, Cornell High Energy Synchrotron Source  
1973-1984: Research Contract with Oak Ridge National Laboratory  
1966-1969: Research Assistant, VandeGraaff Laboratory, Johns Hopkins University  
1964-1965: Summers, Physicist, GS-7, at the Meteorological Satellite Laboratory, Suitland, Maryland, U.S.  
Weather Bureau, ESSE  
1961-1963: Summers, Student Trainee, GS-2, GS-3, GS-4, at the U.S. Weather Bureau, Washington, D.C.  
1960: Summer, Student Trainee, U.S. Naval Weapons Laboratory, Dahlgren, Virginia

## **COURSES TAUGHT AT CORTLAND**

Physics 105: Elementary Mechanics, Heat, and Matter  
Physics 105: Laboratory  
Physics 150\*: Astronomy  
Physics 201: Principles of Physics I  
Physics 201: Laboratory/Recitation  
Physics 202: Principles of Physics II  
Physics 202: Laboratory/Recitation  
Physics 203: Principles of Physics III  
Physics 325\*: Programming  
Physics 357: Intermediate Physics Laboratory  
Physics 358\*: Digital Electronics  
Physics 420: Classical Mechanic  
Physics 440: Electronics with Laboratory  
Physics 450: Electricity and Magnetism  
Physics 495: Independent Study in Physics  
Physics 510: Modern Physics II  
Physics 530: Statistical Mechanics and Thermodynamics  
Physics 559: Advanced Laboratory  
Physics 565: Solid State Physics  
Physics 575: Quantum Mechanics  
Physics 690: Independent Study in Physics  
CAP 200: Fortran Programming  
CAP 330: Independent Study in Computer Applications  
COR 101: The Cortland Experience: A First Year Seminar  
\*Also taught in summer school.

## **COURSES TAUGHT AT CORNELL**

Physics 112: Physics I: Mechanics  
Physics 213: Physics II: Thermodynamics and Electromagnetism

## **PROFESSIONAL SOCIETIES**

American Physical Society  
Phi Beta Kappa  
Society of Physics Students  
Sigma Pi Sigma, Physics Honor Society  
Sigma Xi, The Honorary Research Society  
Johns Hopkins University Economics Honor Society

## HONORS AND AWARDS

- 25) Faculty Research Program research grant of \$2370 for the project Low Energy X-Ray Production Cross Sections, Spring 1999.
- 24) Co-Chaired Session BC: Detectors and Spectrometers at the Thirteenth International Conference on the Application of Accelerators in Research and Industry, November 7, 1994, University of North Texas, Denton, Texas. Also refereed paper PB48, Trace Element Characterization of Cool Fly Ash Particles, T. Paradellis et. al.
- 23) NYS/UUP Professional Development and Quality of Life Continuing Faculty Development Award of \$149 for attending the Thirteenth International Conference on the Application of Accelerators in Research and Industry, Nov 7-10, 1994.
- 22) College Research Committee Grant Incentive Award for \$1000 to write a proposal for research on the Cornell High Energy Synchrotron Source, 1994-1995.
- 21) NYS/UUP Professional Development and Quality of Life Continuing Faculty Development Award of \$350 for research at the National Synchrotron Light Source at Brookhaven National Laboratory, December 1994.
- 20) Continuing Faculty Development Award of \$250 for research at the University of North Texas, June 1993.
- 19) Cortland College Foundation Small Grant Request of \$225 for research at the Brookhaven National Laboratory National Synchrotron Light Source, February 1993.
- 18) NSF Research Opportunity Award for 1991-1993 of \$9,600 to measure inner-shell ionization cross sections in various industrial samples at the University of North Texas Industry/University Cooperative Research Center for Nanostructural Materials Research at Denton, Texas (co-investigator with R. P. Chaturvedi).
- 17) All-College Faculty Research Grant for 1990-1991 of \$2,642 for Inner Shell Ionization.
- 16) NSF Grant of \$111,389 for two-year Summer Institute in Enrichment in Modern Physics, 1988 and 1989.
- 15) 1986 recipient of SUNY Chancellor's Award for Excellence in Teaching.
- 14) SUNY Research Foundation Faculty Research Fellowship for summer 1979 to study K-Shell X-Ray Production Cross Sections by Low Energy  $2\text{He}^4$ .
- 13) Alumni Teaching Improvement Grant (1978) for A Simple Computer Using Digital Electronics.
- 12) Alumni Teaching Improvement Grant (1977) for Alternate Approach to Electronics.
- 11) 1977-78 SUCC Faculty Research Program grant to study Ion Atom Interactions at Low Energies. (Co-investigator with R.P. Chaturvedi)
- 10) SUNY Research Foundation Faculty Research Fellowship for summer 1978 to study M-Shell Ionization in Heavy Atoms by Low Energy Protons.
- 9) Elected to Sigma Pi Sigma 1977.
- 8) SUNY Research Foundation Faculty Research Fellowship for summer 1977 to study Ion Atom Interactions at Low Energies.
- 7) SUNY Research Foundation Faculty Research Fellowship for summer 1975 to study L-Shell Cross Sections of Rare Earth Elements.
- 6) SUNY Research Foundation Faculty Research Fellowship for summer 1974 to study X-Ray Emission Induced by Charged Particles.
- 5) 1974-75 SUCC Faculty Research Program grant to study Ion-Atom Collisions at Low Energies. (Co-investigator with R.P. Chaturvedi)
- 4) 1973-74 SUCC Faculty Research Program grant to study X-Ray Emission Induced by Charged Particles. (Co-investigator with R.P. Chaturvedi)
- 3) Paper EO-1, Trace Element Analysis of Biological Samples by Charged Particle Induced X-ray Excitation given at the 1973 Spring Meeting of the American Physical Society (APS) and chosen by the APS for release to the press as an example of current research activities in Physics.
- 2) Elected to Sigma Xi, 1969.
- 1) Elected to Phi Beta Kappa, 1964.

## PUBLICATIONS

- 25) X-Ray Fluorescence Studies of Cherts, Darren Dale, P. Revesz, and R.M Wheeler, Simple Interest 1 (2005) 48-52.
- 24) Trace Element Analysis of Steel Samples with Synchrotron Radiation, R.M. Wheeler, R.P. Chaturvedi, J.L. Duggan, D.K. Marble, and D. Braswell, Proceedings of the Twelfth International Conference on the Application of Accelerators in Research and Industry, Nucl. Inst. & Meth., B79, 545 (1993).
- 23) M-Shell X-ray Production Cross Sections of Rare-Earth Elements by  $^4\text{H}^{2+}$  Impact in the Energy Range 0.7-7.0 MeV, H.L. Sun, J.F. Kirchhoff, A. R. Azordegan, J.L. Duggan, F.D. McDaniel, R.M. Wheeler, R.P. Chaturvedi, and G. Lapicki, Proceedings of the Twelfth International Conference on the Application of

- Accelerators in Research and Industry, Nucl. Inst. & Meth., B79, 186 (1993).
- 22) M-Shell Ionization of Rare-Earth Elements by Proton Impact in the Energy Range 0.6-4.6 MeV, R.M. Wheeler, R.P. Chaturvedi, H.L. Sun, J.F. Kirchhoff, A.R. Azordegan, J.L. Duggan, F.D. McDaniel, and G. Lapicki, Proceedings of the Twelfth International Conference on the Application of Accelerators in Research and Industry at Denton, Nucl. Inst. & Meth., B79, 194 (1993).
  - 21) Reflections on a Computer Applications Minor, L.K. Klotz and R.M. Wheeler, Proceedings of the Eighth Annual Eastern Small College Computing Conference in the J. of Computing in Small Colleges 8 #2, 168 (1992).
  - 20) Direct Ionization in K-Shell X-Ray Production in Fluorine by Highly Charged Boron, Carbon, and Oxygen Ions, D.K. Marble, F.D. McDaniel, M.R. McNeir, Y.C. Yu, Z.Y. Zhao, D.K. Wilson, D.L. Weathers, J.L. Duggan, R.M. Wheeler, R.P. Chaturvedi, and G. Lapicki, Proceedings of the Eleventh Conference on the Application of Accelerators in Research and Industry, Nucl. Inst. & Meth., B56/57, 531 (1991).
  - 19) X-Ray Production in Fluorine by Highly Charged Boron, Carbon, and Oxygen Ions, F.D. McDaniel, D.K. Marble, J.L. Duggan, M.R. McNeir, Y.C. Yu, Z.Y. Zhao, D.L. Weathers, P.S. Elliott, R.M. Wheeler, R.P. Chaturvedi, and G. Lapicki, Proceedings of the Joint U.S.-Japan Seminar on Dynamical Excitations by Exotic and Highly Charged Ions, Nucl. Inst. & Meth., B53, 531 (1991). Invited paper.
  - 18) Trace Elements in Human Nasal Cavity Bones, R.M. Wheeler, R.P. Chaturvedi, J.S. Onello, V. Valkovic', and J. Kemporic', Proceedings of the Ninth Conference on the Application of Accelerators in Research and Industry, Nucl. Inst. & Meth., B24/25, 658 (1987).
  - 17) Projectile Charge State Dependence of Target M-Shell Ionization by 1.42 MeV/amu Fluorine Ions, R. Mehta, J.L. Duggan, F.D. McDaniel, M.C. Andrews, R.M. Wheeler, R.P. Chaturvedi, P.D. Miller, AND G. Lapicki, Proceedings of the Sixth Conference on the Application of Small Accelerators in Research and Industry in IEEE Transactions on Nuclear Science, Vol. 28, 1981.
  - 16) L-Subshell Ionization Cross Sections of Pr, Sm, Tb, Ho, and Yb for 150-400 keV Protons, R.M. Wheeler, R.P. Chaturvedi, and S. Amey, Proceedings of the Fifth Conference on the Applications of Accelerators in Research and Industry, IEEE Transactions on Nuclear Science, Vol. NS-26, #1, February 1979.
  - 15) K-Shell X-Ray Production in Ge, Rb, Y, Zr, and Ag by N14 Ion Impact, J. Tricomi, J.L. Duggan, F.D. McDaniel, P.D. Miller, R.P. Chaturvedi, R.M. Wheeler, J. Lin, K.A. Kuenhold, L.A. Rayburn, and S.J. Cippolla, Phys. Rev. A15, 2269 (1977).
  - 14) K X-Ray Production Cross Sections for Fourteen Elements from Calcium to Palladium for Incident Carbon Ions, R.M. Wheeler, R.P. Chaturvedi, J.L. Duggan, J. Tricomi, and P.D. Miller, Phys. Rev. A13, 958 (1976).
  - 13) L-Shell X-Ray Production Cross Sections of Pd, Ag, and Sn for Incident Proton Energies in the Range 3-12 MeV and Oxygen Ions in the Range 15-40 MeV, R.P. Chaturvedi, R.M. Wheeler, R.B. Liebert, D.J. Miljanic', T. Zabel, and G.C. Phillips, Phys. Rev. A12, 52 (1975).
  - 12) Neutron-Proton Coincidences from the  $C^{12}(O^{16}, np)Al^{26}$  Reaction, V. Valkovic', R.B. Liebert, R. Plasek, R.M. Wheeler, T. Zabel, and G.C. Phillips, Nuovo Cimento 10, 461 (1974).
  - 11) Techniques for Trace Element Analysis: X-Ray Fluorescence, X-Ray Excitation with Protons, and Flame Atomic Absorption, R.M. Wheeler, R.B. Liebert, T. Zabel, R.P. Chaturvedi, V. Valkovic', G.C. Phillips, P.S. Ong, E.L. Cheng, and M. Hrgovic', Med. Phys. 1, 68 (1974).
  - 10) Trace Element Analysis of Seawater and Fish Samples by Proton-Induced X-Ray Emission Spectroscopy, M.E. Alexander, E.K. Biegert, J.K. Jones, R.S. Thurston, V. Valkovic', R.M. Wheeler, C.A. Wingate, and T. Zabel, Int. J. Appl. Rad. and Isot. 25, 229 (1974).
  - 9) Nuclear g-Factors of First 2+ States in Even Tungsten Nuclei Determined by Recoil Implantation into Nickel and Cobalt, and the Hyperfine Field on Tungsten Nuclei in Nickel and Cobalt, D.A. Garber, M. Behar, W.M.C. King, Z.W. Grabowski, T.P. Scharenberg, P. Sioshansi, and R.M. Wheeler, Phys. Rev. C9, 2399 (1974).
  - 8) Characteristic K-Shell X-Ray Production by Protons Below 500 keV, R. M. Wheeler, R.P. Chaturvedi, and A.R. Zander, Proceedings of the Third Conference on Applications of Small Accelerators, USERDA CONF - 741040-P1, (North Texas State University, Denton, Texas, 1974), p. 387.
  - 7) Trace Element Analysis Using Proton-Induced X-Ray Emission Spectroscopy, V. Valkovic', R.B. Liebert, T. Zabel, H.T. Larson, D. Miljanic', R.M. Wheeler, and G. C. Phillips, Nucl. Instr. and Meth. 114, 573 (1974).
  - 6) Variation in Trace Metal Concentrations Along Single Hairs as Measured by Proton-Induced X-Ray Emission Photometry, V. Valkovic', D. Miljanic', R.M. Wheeler, R.B. Liebert, T. Zabel, and G.C. Phillips, Nature 243, 543 (1973).
  - 5) Directional Correlation of Gamma Radiations Emitted from Nuclear States Oriented by Nuclear Reaction or Cryogenic Methods, K.S. Krane, R.M. Steffen, and R.M. Wheeler, Nucl. Data A11, 351 (1973).

- 4) Magnetic Dipole Moments of First  $2^+$  States in Even Osmium Nuclei Recoil Implanted in Nickel, P. Sioshansi, D.A. Garber, Z.W. Grabowski, R.P. Scharenberg, R.M. Steffen, and R.M. Wheeler, Phys. Rev. C6, 2245 (1972).
- 3) Comparison of IMPACT and Radioactivity Techniques and the Magnetic Dipole Moments of the First  $2^+$  States in  $\text{Os}^{188}$ ,  $\text{Os}^{190}$ , and  $\text{Os}^{192}$ , P. Sioshansi, D.A. Garber, W.M.C. King, R.P. Scharenberg, R.M. Steffen, and R.M. Wheeler, Phys. Letters 39B, 343 (1972).
- 2) Isomer Shift in the 82 keV Transition of  $\text{Sm}^{154}$ , R.M. Wheeler, U. Atzmony, K. A. Hardy, and J.C. Walker, Phys. Letters 31B, 206 (1970).
- 1) Magnetic Dipole and Electric Quadrupole Moments of the First  $2^+$  State of  $\text{Sm}^{154}$ , R.M. Wheeler, U. Atzmony, and J.C. Walker, Phys. Rev. 186, 1280 (1969).

## PUBLIC PRESENTATIONS OF RESEARCH

- 44) Trace Element Analysis of Northeastern Lithic Artifacts: Chert and Flint, John J. Chiment, D. Dale, T.R. Lake, P. Revesz, and R.M. Wheeler, The Northeast Natural History Conference IX, April 20 - April 21, 2006, Albany, New York.
- 43) Where Do Physics Majors Go? R.M. Wheeler at the Physics Careers Seminar, April 18, 1999, Purdue Nuclear Structure Group, Purdue University.
- 42) Trace Elements as a Function of Position in Limestone, R.M. Wheeler and R.P. Chaturvedi, 1994 CHES Users Meeting, June 21-22, 1994, Cornell University.
- 41) X-Ray Fluorescence Analysis of Steel, R.M. Wheeler, R.P. Chaturvedi, J.L. Duggan, and H.L. Sun, 1993 CHES Users Meeting, June 22, 1993, Cornell University.
- 40) X-Ray Fluorescence Analysis of High Z Components in Steel Samples by Synchrotron Radiation, J.L. Duggan, R.M. Wheeler, R.P. Chaturvedi, and D. Braswell, Joint Spring Meeting of the Texas Sessions of APS, AAPT, and SPS Zone 13 at Edinburg, Mar. 12-13, 1993.
- 39) Trace Element Analysis of Steel Samples with Synchrotron Radiation, R.M. Wheeler, R.P. Chaturvedi, J.L. Duggan, and D.K. Marble, Twelfth International Conference on the Application of Accelerators in Research and Industry at Denton, Nov. 2-5, 1992, page 50.
- 38) M-Shell X-ray Production Cross Sections of Rare-Earth Elements by Helium Ion Impact in the Energy Range 0.7-7.0 MeV, H.L. Sun, J.F. Kirchoff, J.L. Duggan, F.D. McDaniel, R.P. Chaturvedi, R.M. Wheeler, and G. Lapicki, Twelfth International Conference on the Application of Accelerators in Research and Industry at Denton, Nov. 2-5, 1992, page 41.
- 37) A Study of M-Shell Ionization of Rare-Earth Elements by Proton Impact in the Energy Range 0.6-4.6 MeV, R.P. Chaturvedi, R.M. Wheeler, H.L. Sun, J.F. Kirchoff, J.L. Duggan, F.D. McDaniel, and G. Lapicki, Twelfth International Conference on the Application of Accelerators in Research and Industry at Denton, Nov. 2-5, 1992, page 40.
- 36) Reflections on a Computer Applications Minor, L.K. Klotz and R.M. Wheeler, Eighth Annual Eastern Small College Computing Conference at Allentown, Oct. 16-17, 1992.
- 35) A Performance-Based Introductory Physics Laboratory, R.M. Wheeler, 1992 Joint APS/AAPT Spring Meeting at Washington, D.C., Apr. 20-24, 1992, Bull. Am. Phys. Soc. 37 #2, 960 (1992).
- 34) Trace Elements in Hoxie Gorge Creek Sediments, R.M. Wheeler and R.P. Chaturvedi, Eleventh International Conference on Application of Accelerators in Research and Industry at Denton, Nov. 5-8, 1990, Bull. Am. Phys. Soc. 35 #8, 1782 (1990).
- 33) "Direct Ionization and Electron Capture in K-Shell X-Ray Product in Fluorine by Highly Charged Boron, Carbon, and Oxygen Ions, D.K. Marble, F.D. McDaniel, J.L. Duggan, M.R. McNeir, Y.C. Yu, Z.Y. Zhao, D.L. Weathers, P.S. Elliott, R.M. Wheeler, R.P. Chaturvedi, and G. Lapicki, Eleventh International Conference on Application of Accelerators in Research and Industry at Denton, Nov. 5-8, 1990, Bull. Am. Phys. Soc. 35 #8, 1714 (1990).
- 32) X-Ray Production in Fluorine by Highly Charged Boron, Carbon, and Oxygen Ions, F.D. McDaniel, D.K. Marble, J.L. Duggan, M.R. McNeir, Y.C. Yu, Z.Y. Zhao, D.L. Weathers, P.S. Elliott, R.M. Wheeler, R.P. Chaturvedi, and G. Lapicki, Invited paper presented at the joint U.S.-Japan Seminar on Dynamical Excitation by Exotic and Highly Charged Ions at Anchorage, June 18-22, 1990.
- 31) Modern Physics Experiments in High School, R.M. Wheeler, R.P. Chaturvedi, R. Nastasi, and K.A. Vernay, Joint New Jersey/Southwest Pennsylvania AAPT Meeting at Philadelphia, Mar. 23-24, 1990.
- 30) NSF Summer Institute in Modern Physics, R.P. Chaturvedi, R.N. Enzweiler, R.M. Wheeler, R. Nastasi, and K.A. Vernay, Joint APS/AAPT Meeting at Atlanta, Jan. 20-25, 1990, Bull. Am. Phys. Soc. 35 #1, 34 (1990).
- 29) NSF Summer Institute in Modern Physics, R.P. Chaturvedi, R.M. Wheeler, R. Nastasi, and K.A. Vernay,

- AAPT Meeting at San Luis Obispo, June 26-July 1, 1989, Announcer AAPT 19 #2, 55 (1989).
- 28) Trace Elements in Human Nasal Cavity Bones, R.M. Wheeler, R.P. Chaturvedi, J.S. Onello, and V. Valkovic', Ninth Conference on the Application of Accelerators in Research and Industry at Denton, Nov. 10-12, 1986.
  - 27) Feasibility Study of Trace Elements in Nasal Cavity Bones, R.M. Wheeler, R.P. Chaturvedi and V. Valkovic', First CHESS User's Group Meeting at Ithaca, June 16-17, 1987.
  - 26) Ionization and Electron Transfer for the K-, L-, and M-Shells for 1.86 MeV/amu Ions on Selected Targets, F.D. McDaniel, J.L. Duggan, R. Mehta, M.C. Andrews, A. Toten, J.D. Gressett, D. Johnson, S.R. Wilson, P.D. Miller, G. Lapicki, G. Basbas, L.A. Rayburn, A.R. Zander, R.M. Wheeler, R.P. Chaturvedi, and R.S. Peterson, Thirteenth International Conference on the Physics of Electronic and Atomic Collisions at Berlin, Germany, July 27-Aug. 2, 1983.
  - 25) Projectile Charge State Dependence of Target M-shell Ionization by 1.42-MeV/amu Fluorine Ions, R. Mehta, J.L. Duggan, F.D. McDaniel, M.C. Andrews, R.M. Wheeler, R.P. Chaturvedi, P.D. Miller, and G. Lapicki, Sixth Conference on the Application of Accelerators in Research and Industry at Denton, Nov. 3-5, 1980, Bull. Am. Phys. Soc. 25 #7, 779 (1980).
  - 24) L-subshell X-ray Cross Sections of Pr, Sm, Tb, Ho and Yb 150-400 keV Protons, R.M. Wheeler, R.P. Chaturvedi, and S. Amey, Fifth Conference on the Applications of Small Accelerators at Denton, Nov. 6-8, 1978.
  - 23) 14-38 MeV Boron Induced Ionization Cross Sections of Ho, Au, Pb, and Bi, R.M. Wheeler, R.P. Chaturvedi, F.D. McDaniel, J.L. Duggan, R. Rice, D. Johnson, R. Mehta, P.D. Miller, L.A. Rayburn, J. Lin, and K. Kuenhold, 1978 Annual APS Meeting at San Francisco, Jan. 23-26, 1978, Bull. Am. Phys. Soc. 23 #1, 92 (1978).
  - 22) L- to K-shell Electron Capture for Si Ions Penetrating Thin Solid Targets of Nd, Ho, and Au, F.D. McDaniel, A. Toten, R.S. Peterson, J.L. Duggan, S.R. Wilson, D. Gressett, G. Basbas, G. Lapicki, P.D. Miller, R.M. Wheeler, R.P. Chaturvedi, A. Zander, K. Kuenhold, and L.A. Rayburn, 1978 Annual APS Meeting at San Francisco, Jan. 23-26, 1978, Bull. Am. Phys. Soc. 23 #1, 18 (1978).
  - 21) Evidence for K-Shell Charge Exchange for  $^{28}\text{Si}$  Ions Penetrating Thin Solid Targets, F.D. McDaniel, J.L. Duggan, R.K. Rice, R. Mehta, B.D. Payne, G.C. Monigold, O.W. Holland, D.E. Johnson, P.D. Miller, L.A. Rayburn, A. Zander, K.A. Kuehnold, R.M. Wheeler R.P. Chaturvedi, and S.J. Cipolla, Eighth Annual Meeting of Division of Electron and Atomic Physics at Lincoln, Dec. 6-8, 1976, Bull. Am. Phys. Soc. 21 #10, 1248 (1976).
  - 20) K-Shell X-Ray Production Cross Sections of Selected Elements P to Ni for 0.4-3.8 MeV/amu  $^{10}\text{B}$  Ions, G. Monigold, F.D. McDaniel, J.L. Duggan, R. Mehta, P.D. Miller, J. Lin, K.A. Kuenhold, R.P. Chaturvedi, R.M. Wheeler, S.J. Cipolla, and L.A. Rayburn, 1976 Spring Meeting at Washington, D.C., Apr. 26-29, 1976, Bull. Am. Phys. Soc. 21 #4, 651 (1976).
  - 19) X-Ray Production for  $^{14}\text{N}$  Ions Incident on Thin Targets of Elements from Ti to Zn, F.D. McDaniel, J.L. Duggan, J. Tricomi, P.D. Miller, K.A. Kuenhold, F. Elliott, J. Lin, R.M. Wheeler, and R.P. Chaturvedi, 1976 Spring Meeting at Washington, D.C., Apr. 26-29, 1976, Bull. Am. Phys. Soc. 21 #4, 650 (1976).
  - 18) K-Shell X-Ray Production by  $^{14}\text{N}$  Ions Incident on Thin Targets of Ge, Rb, Y, Zr, and Ag, J. Tricomi, J.L. Duggan, F.D. McDaniel, P.D. Miller, R.P. Chaturvedi, R.M. Wheeler, J. Lin, K.A. Kuenhold, L.A. Rayburn, and S.J. Cipolla, Texas Academy of Sciences at Austin, Mar. 5, 1976.
  - 17) Production of K-X-Rays by 4- to 38-MeV Boron Ions Incident on Selected Elements from Cu to Sr, R. Mehta, J.L. Duggan, F.D. McDaniel, G. Monigold, P.D. Miller, R.P. Chaturvedi, R.M. Wheeler, K. Kuenhold, J. Lin, and L.A. Rayburn, 1976 Annual Meeting at New York, Feb. 2-5, 1976, Bull. Am. Phys. Soc. 21 #1, 33 (1976).
  - 16) L-Shell X-Ray Production Studies for Light Ions on Sm, Yb, and Pb: 0.3 to 3.0 MeV/Nucleon, T.J. Gray, F.D. McDaniel, R.K. Gardner, G.M. Light, J.L. Duggan, J. Tricomi, R.M. Wheeler, A.R. Zander, and S.J. Cipolla, APS Meeting at Atlanta, Dec. 5-7, 1974.
  - 15) Characteristic K-Shell X-Ray Production by Protons Below 500 keV, R.M. Wheeler, R.P. Chaturvedi, and A.R. Zander, Invited Paper at the Third Conference on Applications of Small Accelerators at Denton, Oct. 21-23, 1974.
  - 14) Measurement of K-Shell Ionization Cross-Section of Ca, Ti, Cr, Co and Ge by 3-12 MeV Protons and  $\Delta E_{\alpha}$  and  $\Delta E_{\beta}$  by Bombardment of 15-40 MeV Oxygen, R.P. Chaturvedi, R.M. Wheeler, R.B. Liebert, D. Miljanic', T. Zabel, and G.C. Phillips, 1974 Spring Meeting at Washington, D.C., Apr. 22-25, 1979, Bull. Am. Phys. Soc. 19 #4, 568 (1974).
  - 13) Study of L-Shell Ionization Cross Section for Pb, Ag, Sn, and Sb for Incident Proton Energies in the Range of 3 to 12 MeV and for Oxygen Ions in the Range of 15 to 40 MeV, R.P. Chaturvedi, R.B. Liebert, D.

- Miljanic', T. Zabel, R.M. Wheeler, and G.C. Phillips, 1974 December Meeting at Atlanta, Dec. 5-7, 1974, Bull. Am. Phys. Soc. 19 #10, 1107 (1974).
- 12) Trace Element Analysis of Biological Samples by Charged Particle Induced X-ray Excitation, R.M. Wheeler, R.B. Liebert, D. Miljanic', G.C. Phillips, V. Valkovic', T. Zabel, R.H. Withers, and L. Milas, 1973 Spring Meeting at Washington, D.C., Apr. 23-26, 1973, Bull. Am. Phys. Soc. 18 #4, 634 (1973).
  - 11) ( $^{16}\text{O}, np$ ) and ( $^{16}\text{O}, na$ ) Reactions on Some Light Nuclei, G.C. Phillips, R. Plasek, R.B. Liebert, R.M. Wheeler, D. Miljanic', and V. Valkovic', 1973 Spring Meeting at Washington, D.C., Apr. 23-26, 1973, Bull. Am. Phys. Soc. 18 #4, 567 (1973).
  - 10) Angular Correlations of Radiations Emitted from Oriented Nuclei, K.S. Krane, R.M. Steffen, and R.M. Wheeler, 1972 Division of Nuclear Physics Meeting at Seattle, Nov. 2-4, 1972, Bull. Am. Phys. Soc., 17 #10, 928 (1972).
  - 9) Systematic g-Factor Measurements in Even Osmium Nuclei by IMPACT, P. Sioshansi, D.A. Garber, W.M.C. King, R.P. Scharenberg, R.M. Steffen, and R.M. Wheeler, 1972 Spring Meeting at Washington, D.C., Apr. 24-27, 1972, Bull. Am. Phys. Soc. 17 #4, 538 (1972).
  - 8) The Ion-Implantation-Perturbed-Angular-Correlation Technique (IMPACT), R.M. Wheeler, Invited talk before the Loyola University of Chicago Physics Department, Apr. 15, 1972.
  - 7) g-g Directional Correlations Following Coulomb Excitation, R.M. Steffen and R.M. Wheeler, 1971 Fall Meeting of the Division of Nuclear Physics at Tucson, Nov. 4-6, 1971, Bull. Am. Phys. Soc. 16 #10, 1156 (1971).
  - 6) Mixing Ratios of the 136 and 165 keV Transitions in  $^{181}\text{Ta}$ , R.M. Wheeler, D.A. Garber, Z.W. Grabowski, R.P. Scharenberg, P. Sioshansi, and R.M. Steffen, 1971 Fall Meeting of the Division of Nuclear Physics at Tucson, Nov. 4-6, 1971, Bull. Am. Phys. Soc. 16 #10, 1156 (1971).
  - 5) Comparison of Impact and Radioactivity g-Factor Measurements with Os192 in Nickel, P. Sioshansi, D.A. Garber, Z.W. Grabowski, W.M.C. King, R.P. Scharenberg, and R.M. Wheeler, 1971 Fall Meeting of the Division of Nuclear Physics at Tucson, Nov. 4-6, 1971, Bull. Am. Phys. Soc. 16 #10, 1156 (1971).
  - 4) Lifetime of the 99.1 keV State of  $^{183}\text{W}$ , K.A. Hardy, R.M. Wheeler, U. Atzmony, and J.C. Walker, 1970 APS Spring Meeting at Washington, D.C., Apr. 27-30, 1970, Bull. Am. Phys. Soc. 15 #4, 656 (1970).
  - 3) Mössbauer Effect Following Coulomb Excitation, R.M. Wheeler, Invited talk before the Purdue University Physics Department, Jan. 5, 1970.
  - 2) Isomer Shift in the 82 keV ( $2^+ \rightarrow 0^+$ ) Transition of  $^{154}\text{Sm}$ , R.M. Wheeler, U. Atzmony, K.A. Hardy, and J.C. Walker, 1969 Winter Meeting at Boulder, Oct. 30-Nov. 1, 1969, Bull. Am. Phys. Soc. 14 #12, 1240 (1969).
  - 1) Measurement of gR for the  $2^+$  State of  $\text{Sm}^{154}$  Using the Mössbauer Effect Following Coulomb Excitation, R.A. Pfeffer, J.C. Walker, R. Shnidman, R.M. Wheeler, and U. Atzmony, 1968 APS Fall Meeting at Miami Beach, Nov. 25-27, 1968, Bull. Am. Phys. Soc. 13 #11, 1471 (1968).

## STUDENT PROJECTS

- 2004-05 Caileen Sullivan: Teaching Assistant in Earth and Sky Learning Community, Fall 2004  
 Jaret Herter: Enhancement of the Physics Department Planetarium
- 2003-04 Kristin Polasik: Teaching Assistant in Earth and Sky Learning Community, Fall 2003
- 2000-01 Sean Dwyer: Physics books for elementary school children  
 Steve Slagle: Super computer from old computers
- 1999-20 Jeb Oblak: EXCEL applications to ballistic problems
- 1997-98 Tom Langan: Digital Electronics  
 Dave Kennedy: Microsoft software
- 1996-97 Frank Meadows: Laser width measurements of human hair  
 Keri Wagner: Web page design for the Physics Department and CAP Minor  
 Sandra Palmer: Microsoft software  
 John Lerner: Design, use, and physical principles of pinhole cameras.
- 1995-96 Tal Gottesman: C Programming  
 William Given: Microsoft Word and Draw
- 1994-95 Leanne Catanzaro: Pagemaker, Microsoft Word, and Microsoft Publisher  
 Melissa Bray and Daniel Eisenberg: Windows and Express Publishing  
 Nicole Rice: Data Base Management Systems  
 J.J. O'Connell: Work in the Library with Internet
- 1993-94 Suzanne Redick and Leslie Rinker: Digital Electronics
- 1992-93 Robert Presthus and Michael Dwyer: A Computer Interface
- 1991-92 Chuck Homrighouse: C Programming Applications

Diane Luttrell: Electronics  
 Laurie Sudbrink: Lotus Applications  
 Danny Sharpe: Statistical Applications and Graphics on the VAX  
 1990-91 Vincent Venezia: Holography  
 1987-88 Patricia Stanley: Van de Graaff Accelerator operations  
 Cheryl Joyce: Computer Aided Instruction for High School Physics  
 Jay Schneiderman: A Telescope Mount  
 1985-88 Scott Sternberg: Used the 400 keV VandeGraaff to study Rutherford scattering.  
 1984-85 Scott Sternberg and Everette Joseph: Repaired and operated the Veeco vacuum evaporator. Made thin film targets for the Van deGraaff.  
 1983-84 Peter Eng: Used the 400 keV VandeGraaff to measure Rutherford scattering cross sections of gold.  
 Bill Siedenbug: Computer Application, wrote a computer program to provide instruction for use of ADM computer terminal.  
 1982-83 Rick Sutphin and Alex Webster: Advanced Electronics, built and tested amplifier circuits.  
 1980-81 Peter Kocur: Used the 400 keV VandeGraaff to measure K-shell x-ray cross sections of selected elements.  
 1978-79 Marilyn Akins: Advanced Electronics, built and tested amplifier circuits.  
 Bob McElroy: Used the 400 keV VandeGraaff to measure K-shell x-ray cross sections of selected elements.  
 Gerry Pogatshnik: Advanced Electronics, built and tested a strain gauge.  
 1977-78 Mike Flaster: Advanced Electronics, digital Electronics.  
 1975-76 Richard Reiss and Susan Oaks: Advanced Electronics, built and tested a family of oscillator circuits.  
 1974-75 Roger Rice, Leroy Hawthorne, and Gerald Caward: Used the 400 keV VandeGraaff accelerator to measure Kshell x-ray cross sections of cobalt.  
 Hugo Uyttenhove: Computer Applications, wrote a non-linear least squares fitting program.  
 1973-74 Dan Prusinowski and Wright Kirk: Advanced Electronics, built and tested radio transmitters and receivers.

## UNIVERSITY SERVICE

- 44) Math/Science Subdivision Personnel Committee, Chairman 2006-2007
- 43) Coordinator of the Earth and Sky Learning Community for Freshman (2002-present)
- 42) Public Relations Committee of the SUNY Faculty Senate (2001-2004), Co-Chairman 2003-2004
- 41) Selector of the Manley Hutchinson Scholarships (2001-present)
- 40) Member Arts and Sciences Secondary Education Council (1999-present)
- 39) Member Teacher Education Council (1999-present)
- 38) Member President's Student Computer Access Program (SCAP) Committee (1998-1999)
- 37) Member President's Information Resources Advisory Committee (1998-1999)
- 36) Selector of the William Joseph Phelps '69 Scholarship (1995-present)
- 35) Graduate Academic Programs and Research Committee of the SUNY Faculty Senate (1997-2001)
- 34) Acting Director of the Center for the Advancement of Technology in Education and Coordinator of the Computer Applications Minor (Fall 1998)
- 33) Assistant Director of the Center for the Advancement of Technology in Education (1997-present)
- 32) Provost's Committee to propose a new Center for the Advancement of Technology in Education (1996-97)
- 31) Chaired Provost's CAP Computer Advisory Committee (1996-97)
- 30) Chaired the afternoon session of the "Centennial Celebration of X-Rays and Radioactivity" held March 29, 1996.
- 29) Building Administrator for Bowers Hall (Fall 1995)
- 28) Member of the Special Math Department Personnel Committee (1995-1996)
- 27) Arts and Sciences Curriculum Committee (1994-1996), Chairman (1995-1996)
- 26) Search Committee for Library Computer Staff (Fall 1994)
- 25) Search Committee for the Dean of Arts and Sciences (1994-1995)
- 24) Coordinator, Computer Application Minor (1990-1997)
- 23) Committee on Committees (Fall 1990)
- 22) General Education Committee (1989-1992)
- 21) Physics Department Personnel Committee (1973-present)
- 20) Campus Computer Advisory Committee (1983-1995)
- 19) Sub-Committee on Student Computer Access Fee (1988-1995)
- 18) CAP Steering Committee (1988-1997)



- 17) President's Computer Advisory Committee (1979-81)
- 16) Faculty Representative to SUNY Computer Officer's Association 1981
- 15) Scholars Day Committee (1984, 1985)
- 14) Math-Science Subdivision Personnel Committee (1977-85, 1985-1988 alternate, 1988-89, 1990-91 alternate)  
Chairman, (1977, 1978, 1981, 1983, 1988, 1989)
- 13) Bowers Hall Building Administrator (1983-1987)
- 12) Sandwich Seminar, "Computer Use on Campus" (March 23, 1983)
- 11) Vice President's Committee to Evaluate the Orientation Program (1983)
- 10) Committee to Evaluate Academic Programs for Middle States Review (1981)
- 9) Arts and Sciences Divisional Curriculum Committee (1981)
- 8) All College Basic Studies Committee (1979, 1980)
- 7) Faculty Affairs Committee (1978, 1979)
- 6) Auxiliary Services Corporation (1975, 1976, 1977)  
Board of Directors (1975, 1976)  
Chairman, Personnel Committee (1975, 1976)  
Chairman, Scholarship Committee (1975, 1976)
- 5) Educational Policy Committee (1975, 1976)
- 4) All College Promotions Committee (1977)  
Subcommittee on Grade Inflation (1978)
- 3) Student Senate (1976)
- 2) Arts and Sciences Personnel Committee, Chairman (1977)
- 1) Faculty Senate (1974)

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