

## **ROBERT I. BOUGHTON, JR.**

Professor  
Dept. of Physics and Astronomy  
Bowling Green State University  
Bowling Green, OH 43403  
(419) 372-2421, (419) 372-7832  
FAX: (419) 372-9938  
boughton@bgnet.bgsu.edu

### **Academic Degrees**

- Ph.D. 1968      Ohio State University - Physics  
Dissertation: Size and impurity effects in the thermal conductivity of very pure gallium.
- M.S. 1964      Ohio State University - Physics
- B.S. 1964      Ohio State University - Engineering Physics (summa cum laude)

### **Academic Positions**

- 2000-present:      Professor, Dept. of Physics and Astronomy  
Bowling Green State University
- 1980-2000:      Professor and Chair, Dept. of Physics and Astronomy  
Bowling Green State University
- 1974-1980:      Associate Professor, Physics Department,  
Northeastern University, Boston, Massachusetts
- 1978-1979:      Sabbatical leave at Department of Physics,  
Ohio State University, Columbus, Ohio
- 1970-1974:      Assistant Professor, Physics Department,  
Northeastern University, Boston, Massachusetts
- 1969-1970:      Visiting Assistant Professor, Physics Department,  
Northeastern University, Boston, Massachusetts
- 1968-1969:      NSF Post-doctoral Fellow at the Swiss Federal Institute of Technology  
(ETH) in Zurich; Institut für Kalttemperaturforschung
- 1964-1968:      National Science Foundation Co-Operative Fellow
- 1965-1966:      Ohio State University Fellow

**Non-Academic Positions**

1963-1964: Assistant Engineer, Environmental Engineering Section,  
Battelle Memorial Institute, Columbus, Ohio

**Administrative Experience**

- 1980-2000: Chair, Dept. Physics and Astronomy, Bowling Green State University
- supervision of 10-12 faculty, including director of the BGSU Planetarium, 3 full-time staff
  - administration of \$70,000 operating budget, and \$1,100,000 personnel budget.
  - oversight over \$250,000 in instructional equipment purchases
- 1994-2000 Director, Center for Materials Science, Bowling Green State University
- supervision of interdisciplinary instructional and research program
  - administration of \$50,000 operating budget
- 1992-2002 Coordinator, Ohio Materials Network
- equipment sharing consortium of materials-based institutions throughout Ohio.

**Teaching Experience**

—Undergraduate courses

Bowling Green State University -  
Introductory College Physics (Honors)  
Introductory Laboratory (Honors)  
Physics for Elementary Teachers  
College Physics  
Solid State Physics  
Electricity & Magnetism  
Atomic & Nuclear Physics  
Basic Physics  
Thermodynamics  
Modern Physics Lab  
Heat, Thermodynamics and Optics Lab  
Electronics  
Materials in the Service of Man  
Materials Science  
Classical Mechanics  
Introduction to Theoretical Physics

Graduate Courses

Introduction to Experimental Techniques  
Advanced Solid State Physics  
Computational Physics  
MAT Wave Motion  
MAT Heat and Thermodynamics  
MAT Mechanics

Northeastern University

Introductory Physics for Engineers and Scientists  
-- course coordinator (1000 students)  
Physics for Respiratory Therapists  
Physics for Criminal Justice Students  
Introductory Laboratory: co-supervisor  
Classical Mechanics Wave Motion and Optics  
Advanced Laboratory

**Thesis and Dissertation Students**

Luigi Morelli	Ph.D.	1972	Northeastern University
Richard Ricca	Ph.D.	1984	Northeastern University
Chih-Jung Sa	M.S.	1982	Bowling Green State University
Dharmalatha Ratnaweera	M.S.	1983	Bowling Green State University
Kou-Rong Jou	M.S.	1984	Bowling Green State University
Digala Kulawansa	M.S.	1985	Bowling Green State University
Ambalavanar Thavendrarajah	M.S.	1985	Bowling Green State University
Joshua Isenberg	M.S.	1986	Bowling Green State University
Mohamedo Minhaj	M.S.	1987	Bowling Green State University
Fang-Fang Yin	M.S.	1987	Bowling Green State University
Gamini Sumanasekera	M.S.	1987	Bowling Green State University
Qing-qi Huang	M.S.	1988	Bowling Green State University
Sarath Tennakoon	M.S.	1988	Bowling Green State University
Jian-Hua Chen	M.S.	1989	Bowling Green State University
De-Cai Sun	M.S.	1990	Bowling Green State University
Yulei Jiang	M.S.	1990	Bowling Green State University
Mu Chai	M.S.	1990	Bowling Green State University
Kousalya Krishnaswamy	M.S.	1990	Bowling Green State University
Mohammed Nilforoushan	M.S.	1990	Bowling Green State University
Steven Dean	M.S.	1990	Bowling Green State University
Jill M. Wyse	M.S.	1992	Bowling Green State University
Yashan Zhang	M.S.	1992	Bowling Green State University
Jignasa Jani	M.S.	1992	Bowling Green State University
Zhiping Feng	M.S.	1992	Bowling Green State University
Girma Kassa	M.S.	1996	Bowling Green State University
Suraphel Mendaye	M.S.	1997	Bowling Green State University
Zhen Zhang	M.S.	1997	Bowling Green State University
Shen Wang	M.S.	1998	Bowling Green State University
Yi Yang	M.S.	1998	Bowling Green State University
Andrey Tulyulyuk	M.S.	1999	Bowling Green State University
Dino Smajlovich	M.S.	2001	Bowling Green State University
Bradley Hughes	M. S.	2002	Bowling Green State University
Rose Reinhart	M.A.T.	2004	Bowling Green State University
Andrew Frank	M.A.T.	2005	Bowling Green State University
Andrea Hazelton	M.A.T.	2005	Bowling Green State University
Mary Kate Hafeman	M.A.T.	2006	Bowling Green State University
Jagganath Paul	M.S.	2006	Bowling Green State University
Kristie Pinney	M.A.T.	2007	Bowling Green State University
Elizabeth McCullough	M.A.T.	2007	Bowling Green State University

**Membership on Dissertation Committees**

William Spillman	Ph.D.	1977	Northeastern University
Olga Golbournova	Ph.D.	1997	Bowling Green State University
Alexandr Meijeritskiy	Ph.D.	1997	Bowling Green State University
Elena Komarova	Ph.D.	2002	Bowling Green State University
Artur Erlacher	Ph.D.	2005	Bowling Green State University

**Membership on Thesis Committees**

Barry Hecker	M.S.	1981	Bowling Green State University
Betty Jean King	M.S.	1982	Bowling Green State University
Lorie Weintraub	M.S.	1983	Bowling Green State University
Andrew Grunke	M.S.	1985	Bowling Green State University
Chula Mapalagama	M.S.	1987	Bowling Green State University
Zhilin Huang	M.S.	1987	Bowling Green State University
Ganesh Shastri	M.S.	1992	Bowling Green State University
Jeyakumari Khan	M.S.	1993	Bowling Green State University
Shaohua Zhang	M.S.	1994	Bowling Green State University
Jeremy Grata	M.S.	1996	Bowling Green State University
Ping Ruan	M.S.	1996	Bowling Green State University
Weili Zhang	M.S.	1996	Bowling Green State University
Keqin Zheng	M.S.	1996	Bowling Green State University
Jianhua Chen	M.S.	1998	Bowling Green State University
Ruidong Chi	M.S.	1998	Bowling Green State University
Valentin Petrov	M.S.	1998	Bowling Green State University
Zili Weng	M.S.	1998	Bowling Green State University

**Curriculum Development**

Undergraduate Honors Laboratory, 1980/81  
 Undergraduate Laboratory/Northeastern University, 1970/75  
 Materials Curriculum Development, 1992-present  
 Web Laboratory Development, 1997-present  
 Laboratory Supervisor, 1998-2006

**Professional Development**

Sabbatical leave for low-temperature research at Ohio State University, 1978/79

**Research Interests**

Experimental: Solid State Physics (Metals)  
Low Temperature Physics  
Superconductivity  
Thermoelectric Materials

**Research Projects and Grants**

The Research Corporation, 1971, \$6500

National Science Foundation, DMR 75-13090, DMR 77-24023, and DMR 79-27031; (1975-1981); Total award: \$137,023.

Title: "Deviations from Matthiessen's rule in the electrical resistivity and attendant effects in other transport properties; and flux quantization effects in normal metals"

Ohio Board of Regents Investment Fund Competition (co-PI on a total of \$4,000,000 distributed around Ohio):

Title: "The Ohio Materials Network"

BGSU equipment funds:

1993: \$181,000

1995: \$ 91,000

Ohio Materials Network Headquarters Grant

1997: \$ 30,000

BGSU Technology Development Grant

2000: \$ 6,288

BGSU PICT Development Grant

2000: \$ 4,300

**Publications****Textbooks**

*Laboratory Experiments and Exercises, Physics 201/211*, (Wiley, 1999- 2008)

*Laboratory Experiments and Exercises, Physics 202/212*, (Wiley, 1999-2008)

*Physics 101 Laboratory Experiments and Exercises* (BGSU, 1996-2008).

*Physics 101 Laboratory Manual*, editor (Burgess Publ., 1995)

*Physics 201-202 Laboratory Manual*, editor (Kendall Hunt, 1994)

*Experiments in Physics* (Kendall-Hunt, 1978), with A. Cromer

*Laboratory Manual to Accompany 'Physics for the Life Sciences'* (McGraw-Hill, 1973), with A. Cromer

*A First Course in Laboratory Physics* (Northeastern Press, 1970), with B. Gottschalk.

**Papers (Unrefereed)**

1. "Analysis of the effect of oxygen doping and pressure on superconducting phase transition in  $Y_{0.9}Ca_{0.1}Ba_2Cu_3O_{7-d}$ ", with A. A. Kosov, presented at the 32nd Workshop on Low Temperature Physics, Kazan, Russia, Oct. 2000.
2. "Thermoelectric Properties of a Novel Material,  $LaFeCoSb$ ", with Y. Yang, presented at Spring 1999 Ohio Section - American Physical Society meeting
3. "Ghost Image Problem in Organic Photoconductors", with S. Wang, presented at Spring 1998 Ohio Section - American Physical Society meeting.
4. "Characterization and Elimination of Threshold Voltage Problems in the BIMOS Process", with S. Dean, *Bull. Am. Phys. Soc.* **36**, 1692 (1991).
5. "Elimination of Metal Cracking in the Silicon on Sapphire Process", with M. Nilforoushan, *Bull. Am. Phys. Soc.* **36**, 1692 (1991).
6. "Quenching of Ordinary Superconductivity in Thin Films in Contact with Bulk 1-2-3 Superconductor", with Y. Jiang, *Bull. Am. Phys. Soc.* **36**, 1690 (1991).

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**Invited Talks and Colloquia**

1. "Boundary Scattering in Thin Conducting Films", Tsinghua University, China, May, 1995
2. "Boundary Scattering in Thin Conducting Films", Shandong University, China, May, 1995
3. "Boundary Scattering in Thin Conducting Films", Nanjing University, China, May, 1995
4. Short Course in Solid State Physics, Mari State University, Russia, December, 1997
5. "Size Effects in Electron Transport Properties", Mari State University, Russia, December, 1997
6. "Size Effects in Electron Transport Properties", Kazan' State University, Russia, January, 1998
7. "Novel Thermoelectric Materials", Shandong University, China, June, 2000
8. "Novel Thermoelectric Materials", Huangzhou University, China, June, 2000
9. "Thermoelectric Figure of Merit for Some Lanthanum Filled Skutterudites, Shandong University Colloquium, October, 2002:
10. "Thin Film Thermoelectric Materials", Shandong University Colloquium, June, 2004.
11. "Skutterudite thermoelectrics by pulsed laser deposition", Shandong University Colloquium, October, 2006.

**Journal Articles (Refereed)**

1. "Growth and Characterization of Single Crystal  $Y_2O_3:Eu$  Nanobelts Prepared with a Simple Technique", Li X, Li Q, Xia Z, Wang L, Wang J, Boughton R I, *Crystal Growth Des: (Communication)*, **6**, 10 (2006) 2193-2196.
2. "Lattice Vibration and Optical Properties of Crystalline  $Nd:KLu(WO_4)_2$ ", Zhao HY, Wang JY, Zhang HJ, Li J, Xu GG, Yu LL, Gao WL, Xia HR, Boughton RI, *Chemical Physics Lett.*, **450** 4-6 (2008) 274-80.
3. "Optical and Thermal Properties of Crystalline  $Tb:KLu(WO_4)_2$ ", Wang JY, Zhao JX, Ling ZC, Xia HR, Boughton RI, *Materials Lett.*, **61**, 11-12 (2007) 2499-501.
4. "Growth of Cubic  $KTa_{1-x}Nb_xO_3$  Crystal by Czochralski Method", Wang JY, Wang XP, Yu YG, Zhang HJ, Boughton RI, *Jour. Crystal Growth*, **293**, 2 (2006) 398-403.
5. "Thermal Properties of Cubic  $KTa_{1-x}Nb_xO_3$  Crystals", Wang XP, Wang JY, Zhang HJ, Yu YG, Wu J, Gao WL, Boughton RI, *J. Appl. Phys.* **103**, 063513 (2008).

6. "Thermal Properties of Monoclinic Crystal  $\text{Er}^{3+}:\text{Yb}^{3+}:\text{Ca}_4\text{YO}(\text{BO}_3)_3$ ", Ge WW, Zhang HJ, Wang JY, Jiang MH, Sun SQ, Ran DG, Xia HR, Boughton RI, *J. Appl. Crystallography* **40**, (2007) 125-132.
7. "Growth and thermal properties of  $\text{SrWO}_4$  single crystal, with Fan J.D., Zhang H. J., Wang J. Y., Jiang M. H., Ran D., Sun S. Q., and Xia H. R., *J. Appl. Phys.* **100**, 6 (2006) 63513-16.
8. "Inhomogeneity of composition in near stoichiometric  $\text{LiNbO}_3$  single crystal grown from Li rich melt", Gao L., Wang J. Y., Liu H., Hu X. B., Yao S. H., Wu J. B., and Qin X. Y., *Crystal Res. and Technology* **41**, 4 (2006) 332-6.
9. "Preparation of highly dispersed YAG nano-sized powder by co-precipitation method", with Xu Guogang, Zhang Xudong, He Wen, Liu Hong, and Li Hong, *Materials Letters*, **60**, 7, [962-965], (2006)
10. "Growth, conductivity and periodic poled structure of doped  $\text{KTiOPO}_4$  and its analogue crystals", with Jiyang Wang, Jianxiu Zhang, Binghui Ge, Yaogang Liu, Xiaobo Hu, Gang Zhao, and Shining Zhu, *Optical Materials*, **28**, 4, [355-9] (2006)
11. "Solvothermal Synthesis and Luminescent Properties of YAG: Tb Nano-sized Phosphors", with Xia Li, Hong Liu, Jiyang Wang, Hongmei Cui, and SL Yang, *J. Phys. Chem. Solids* **66**, 201-205 (2005).
12. "Thermal and Mechanical Properties of  $\text{BaWO}_4$  Crystal", with Ge W W, Zhang H J, Wang J Y, Liu, J, H, Xu X G, Hu X B, Jiang M H, Ran D G, Sun S Q, and Xia H E, *J. Appl. Phys.*, **98**, [013542] (2005).
13. "Anisotropic Thermal Expansion of Monoclinic Lutetium Tungstate Single Crystals", with Wang K P, Zhang J X, Wang J Y, Zhang H J, Wang Z P, Yu W T, Lu Q M, and Ba M F, *J. Appl. Phys.* **98**, [046101] (2005).
14. "Growth of  $\text{Bi}_2\text{Se}_3$  Nanobelts Synthesized through a Coreduction Method under Ultrasonic Radiation at Room Temperature", with Liu H, Cui H M, Han F, Li X, and Wang J Y, *Crystal Growth and Design* **5**, 1711-1714 (2005).
15. "First-principles study of interstitial oxygen in potassium dihydrogen phosphate crystals", with Kunpeng Wang, Changshui Fang, Jianxiu Zhang, Liu, C., Shenglai Wang, and Xian Zhao, *Physical Review B (Condensed Matter and Materials Physics)* , **72**, 18 [184105-1-5] (2005)
16. "Novel synthesis of YAG by solvothermal method", with Xudong Zhang, Hong Liu, Wen He, Jiyang Wang, and Xia Li, *Journal of Crystal Growth* , **275** ,1-2, [e1913-17] (2005)

17. "Synthesis of Monodisperse and Spherical YAG Nanopowder by a Mixed Solvothermal Method", with Xudong Zhang, Hong Liu, Wen He, Jiyang Wang, Xia Li, Hongmei Cui, *Journal of Alloys and Compounds* **372**, [1-2] 300-303 (2004).
18. "Synthesis of Bi<sub>2</sub>Se<sub>3</sub> Thermoelectric Nano-sheets and Nanotubes through Hydrothermal Co-reduction Method", with Hongmei Cui, Hong Liu, Xia Li, Jiyang Wang, Feng Han, and Xudong Zhang, *J. Sol. St. Chem.* **177** [11] 4001-4006 (2004).
19. "Influence of Annealing on ZnO films Grown by Metal-organic Chemical Vapor Deposition", Hongxia Li, Hong Liu, Jiyang Wang, Shushan Yao, and Xinfeng Cheng, *Materials Letters* **58**, [27-28] 3630-3633 (2004).
20. "Growth, conductivity and generation of blue coherent laser of cesium doped KTiOPO<sub>4</sub> crystals", with Jianxiu Zhang, Jiyang Wang, Binghui Ge, Yaogang Liu, Xiaobo Hu, *Journal of Crystal Growth* **267** [3-4] 517-521 (2004).
21. "Sonochemical Synthesis of Bismuth Selenide Nanobelts at Room Temperature", with Hongmei Cui, Hong Liu, Xia Li, Jiyang Wang, Xia Li and Feng Han, *J. Crystal Growth* **271** [3-4] 456-461 (2004).
22. "Production of YAG nano-sized powders by ethanol-aqueous solvothermal synthesis", with Xia Li, Hong Liu, Jiyang Wang, Hongxia Li, Xudong Zhang, Hongmei Cui, Feng Han, *J. Amer. Ceram. Soc.* **87** [12] 2288-2290 (2004).
23. "Growth of NaFe<sub>4</sub>P<sub>12</sub> Skutterudite Single Crystalline Nanosprings Synthesized through a Hydrothermal-Reduction-Alloying Method", with Hong Liu, Hongmei Cui, Jiyang Wang, Feng Han, and Minhua Jiang, *Journal of Physical Chemistry B* **108** [35], 13254-13257 (2004).
24. "Rapid synthesis of YAG nano-sized powders by a novel method", with Xia Li, Hong Liu, Jiyang Wang, Hongmei Cui, Feng Han, and Xudong Zhang, *Materials Letters* **58** [19] 2377-2384 (2004).
25. "Solvothermal synthesis and luminescent properties of YAG:Tb nano-sized phosphors", with Xia Li, Hong Liu, Jiyang Wang, Hongmei Cui, and Shunliang Yang, *J. Phys. Chem. Solids* **66** [1] 201-205 (2005).
26. "Structure and Electronic Transport Properties of Polyaniline/NaFe<sub>4</sub>P<sub>12</sub> Composite, with Liu, Wang, Hu, Zhao, and Jiang, *Chemical Physics Letters* **352** (2002) p.185-190
27. "Preparation of filled skutterudite nanowire by a hydrothermal method". Hong Liu et al. *Journal of Alloys and Compounds* **334** (2002) p.313-16

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28. "Structure, Conductivity and Thermopower of Crystalline Polyaniline Synthesized by Ultrasonic Irradiation Polymerization Method, with H. Liu, X. B. Hu, and J. Y. Wang, *Macromolecules* **25**, (2002) p.9414-9419
  29. "Materials: An Interdisciplinary Integrative Approach", *American Journal of Physics* **69**, (2001) 901-906
  30. "Analysis of the Effect of Oxygen Doping and Pressure on Superconducting Transition Temperature in Metal Oxides", with A. Kosov, *JETP* **115**, 80 (1999), *in translation JETP* **88**, 46 (1999).
  31. "Monte Carlo Simulation of the DC Size Effect in Thin Films", with Z. Feng, *International Journal of Modern Physics: Physics and Computers* **6**, 223 (1995).
  32. "Magnetic Flux Quantization Effects in Disordered Bismuth" with K. Rajasekharan, F. Yin, G. Sumanasekera, *Mod. Phys. Lett.* **B2**, 1039 (1988).
  33. "Temperature and Impurity Dependence of Electrical Resistivity in Dilute Gallium Based Alloy II: a-axis Crystals," with R. Ricca, *Phys. Rev. B* **36**, 9052 (1987).
  34. "Size-induced Deviations from Matthiessen's Rule in (100) gallium single crystals," *Phys. Rev. B* **29**, 4205 (1984).
  35. "Effect of Boundary Scattering on the temperature dependence of the resistivity in gallium," *Bull. Am. Phys. Soc.* **29**, 446 (1984).
  36. "Size-dependent Deviations from Matthiessen's Rule in the Resistivity of Gallium", *J. Phys. F: Metal Phys.* **11**, L153 (1981).
  37. "Bulk Residual Resistivity of Ultra-Pure Gallium," *Phys. Letters* **74A**, 141 (1979).
  38. "Effect of Boundary Scattering on the Diffusion Thermopower," *J. Low. Temp. Phys.* **37**, 31 (1979).
  39. "Temperature and Impurity Dependence of the Electrical Resistivity in Dilute Gallium-based Alloys I: b-axis Crystals," with J. J. Polick and L. Morelli, *Phys. Rev.* **17**, 1611 (1978).
  40. "Evidence for a 'Dirty' Limit in the Resistivity of Dilute Gallium-based Alloys," with J. J. Polick, *J. Phys. F: Metal Phys.* **6**, L177 (1976).
  41. "Thermoelectric Power of Pure Gallium, II. Size and Impurity Effects," with S. N. Mahajan, J. G. Daunt and M. Yaqub, *J. Low Temp. Phys.* **13**, 573 (1973).

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42. "Thermoelectric Power of Pure Gallium, I. Temperature Dependence," with S. N. Mahajan, J. G. Daunt and M. Yaqub, *J. Low Temp. Phys.* **12**, 347 (1973).
  43. "Deviations from Matthiessen's Rule in Gallium and Other Polyvalent Metals," with L. Morelli and J. E. Neighbor, *J. Phys. F: Metal Phys.* **3** L102-5 (1973).
  44. "Temperature Variation of the Lorenz Ratio for High Purity Gallium between 1.4 K and 4.2 K," with D. L. Waldorf, M. Yaqub and D. Zych, *J. Low Temp. Phys.* **9**, 435 (1972).
  45. "Ordinary Size Effects and Deviations from Matthiessen's Rule in the Resistance of Fine Wires," with J. E. Neighbor, *J. Low Temp. Phys.* **7**, 241 (1972).
  46. "The Volume Dependence of the Electronic Density of States in Superconductors," with J. L. Olsen and C. Palmy, *Proc. 3rd IMR Symposium Electronic Density of States*, ed. L. H. Bennett, N.B.S. Special Publ. 323 (1971).
  47. "Pressure Effects in Superconductors," with J. L. Olsen and C. Palmy, *Progress in Low Temperature Physics*, ed. C. J. Gorter, Vol. VI (North-Holland, 1970).
  48. "The Destruction of Superconductivity under Pressure," with G. Brandli, J. L. Olsen and C. Palmy, *Helvetica Physica Acta* **42**, 587 (1969).
  49. "Anisotropy of the Electron Mean Free Path in the Thermal Conductivity of Very Pure Gallium," with M. Yaqub, *Phys. Kondens. Materie* **9**, 138 (1969).
  50. "Size Effects in the Electronic Thermal Conductivity of Gallium Single Crystals," with M. Yaqub, *Phys. Rev. Let.* **20**, 108 (1968).
  51. "Solderless Thermal Connector for Use at Low Temperatures," with N. Brubaker and R. Sarwinski, *Rev. Sci. Instr.* **38**, 1177 (1967).
  52. "Anistropy in the Temperature Dependence of the Electronic Relaxation Process in Gallium," with D. L. Waldorf, M. Yaqub, and W. Jeffers, *Proc. 10th International Conference on Low Temperature Physics (Moscow, 1967)*.
  53. "Temperature Dependence of Electron Scattering in Thin Single Crystal Films of Gallium at He Temperatures," with M. Yaqub, D. L. Waldorf and W. Jeffers, *Phys. Letters* **23**, 423 (1966).

**Service***Department of Physics  
and Astronomy:*

Chair, 1980-2000  
Co-Chair, Organizing Committee- Spring 1997, Meeting of Ohio Section/  
American Physical Society.  
Chair, Organizing Committee- Fall 1990, Meeting of Ohio Section/ American  
Physical Society.  
Member Organizing Committee - Fall 1982 meeting of Ohio,  
Section/American Physical Society

*College of Arts  
and Sciences:*

College Committee on Budget, 1982-84; 1990-93  
Council of Chairs Steering Committee, 1985-87  
Vice Chair College Council of Chairs, 1995  
Chair, College Council of Chairs, 1996  
Arts and Sciences Council, 2004-2006, 2007-2009  
Promotion and Tenure Recommendation Committee (PTRC), 2004-2005

*University:*

Director, Center for Materials Science (past)  
Member, Ad Hoc Committee on Women in Science  
Member, Faculty Senate  
Member, Faculty Welfare Committee  
University Council of Chairs 1985-87, 1995-97  
Vice Chair, Faculty Senate, 2004  
Undergraduate Council, 2004-2006  
Chair, Faculty Senate, 2005-2006  
Member, Faculty Senate, 2007-present  
Member, Faculty Personnel Conciliation Committee, 2006-present  
Member, Ad Hoc Senate Committee on Faculty Sanctions

*Professional:*

Coordinator and Chair of Executive Committee, Ohio Materials Network  
Referee, NSF Materials Research Panel, 1988-1993  
Referee, numerous research papers and proposals

**Membership in Professional Organizations**

Materials Research Society  
American Association of Physics Teachers  
American Physical Society  
Sigma Xi (past Chapter President)  
President - Ohio Section/American Physical Society 1992

**Honors and Awards**

Tau Beta Pi Engineering Honorary  
Sigma Pi Sigma Physics Honorary  
Appreciation Award, BGSU Upward Bound Science Program (1995)  
Phi Kappa Phi Honor Society  
Lifetime Achievement Award (2007)