

DAVID R. ALEXANDER

ERP Project Manager
Idaho State University
Pocatello, ID 83209-8037
(208) 282-3882
alexdavi@isu.edu

EDUCATION:

Ph.D.	Indiana University	astrophysics	1972
M.A.	Indiana University	astronomy	1968
B.A.	Kansas State University	physics	1967

POSITIONS:

2006 – present	ERP Project Manager, Idaho State University
2003 - 2006	WIN Project Manager, Wichita State University
1996 - 2003	Professor of Physics, Wichita State University
1999 - 2004	Founder & Director, High Performance Computing Center
1995 - 2003	Founder & Executive Director, Fairmount Center for Science and Mathematics Education
1986 - 2003	Executive Director, Lake Afton Public Observatory
1990 - 1998	Chairperson of Physics Department, Wichita State University
1977 - 1996	Associate Professor of Physics, Wichita State University
1993-1994	Visiting Professor, Astronomy Department, Indiana University – Bloomington
1988	Visiting Research Associate, Astronomy Department, Indiana University - Bloomington
1983 - 1984	Visiting Scientist, Astronomy Department, Indiana University - Bloomington
1982 - 1984	Author, John Wiley & Sons, Inc.
1979 - 1986	Founder & Director, Lake Afton Public Observatory
1978 - 1980	Coordinator of Kellogg Activities, Wichita State University
1978	Kellogg Planning Associate, Wichita State University
1976	Editor, NCA Accreditation Self-Study Report, Wichita State University
1971 - 1977	Assistant Professor of Physics, Wichita State University

AWARDS:

ITRMC Achievement Award for IT Project Management, 2010
University Recognition Award, 2009
Project Management Methodology Certification, 2004
Distinguished Service Award, Wichita State University, 2002
NASA/ASEE Summer Faculty Fellowship, Ames Research Center, 1986, 1987
Excellence in Teaching Award, Wichita State University, 1983
FIPSE Internship, Exploratorium, San Francisco, 1980
NASA/ASEE Summer Faculty Fellowship, Goddard Space Flight Center, 1973, 1974

NASA Graduate Traineeship, Indiana University, 1967-1969

PUBLICATIONS:

These works have been cited 3,089 times as of 11/13/2010, according to listings maintained by the Astrophysics Data System (http://adsabs.harvard.edu/abstract_service.html)

1. Alexander, D. R. and Johnson, H. R., 1972, "Model Atmospheres for Cool Supergiant Stars", *Astrophysical Journal*, **176**, 629.
2. Malik, F. B. and Alexander, D. R., 1973, "A Microscopic Calculation of the Imaginary Potential in Heavy Nucleus Scattering", *Physics Letters*, **42B**, 412.
3. Alexander, D. R. and Fix, J. D., 1974, "Solid Particles and Stellar Mass Loss", *Astrophysical Journal*, **188**, L91.
4. Alexander, D.R., 1975, "Low Temperature Rosseland Opacity Tables", *Astrophysical Journal Supplement*, **29**, 363.
5. Alexander, D. R., 1982, "The Wichita State Experience", in *Planned Change: The Approaches of Three Universities* (ed: G.M. Hipps) Jossey-Bass.
6. VandenBerg, D. A., Hartwick, F. D. A., Dawson, P., and Alexander, D. R., 1983, "Studies of Late-type Dwarfs", *Astrophysical Journal*, **266**, 747.
7. Alexander, D. R., Johnson, H. R., and Rypma, R. L., 1983, "Effect of Molecules and Grains on Rosseland Mean Opacities", *Astrophysical Journal*, **272**, 773.
8. Johnson, H. R., Alexander, D. R., Bower, C. D., Lemke, D. A., Luttermoser, D. G., Petrakis, J. P., Reinhart, M. D., Welch, K. A., and Goebel, J. H., 1985, "Hydrogen-Deficient Atmospheres for Cool Carbon Stars", *Astrophysical Journal*, **292**, 228.
9. Alexander, D. R. and Johnson, H. R., Augason, G.C., and Wehrse, R., 1987, "A New Treatment of Water Vapor Opacity," in *Circumstellar Matter*, Appenzeller, I. & Jordan, C. (ed.), D. Reidel Publishing Co., 387.
10. Alexander, D. R., Augason, G. C., Brown, J. A., and Johnson, H. R., 1989, "Fluxes in M Giants with Improved Water Vapor Opacity", in *Evolution of Peculiar Red Giant Stars*, Johnson, H. R. and Zuckerman B. (ed), Cambridge University Press, 153.
11. Augason, G. C., Brown, J. A., and Alexander, D. R., 1989, "Comparison of Blanketing in a 3000 K, Oxygen-Rich, Spherically Symmetric Model with the Blanketing in non-Mira, M Giant Stars", in *Evolution of Peculiar Red Giant Stars*, Johnson, H. R. and Zuckerman B. (ed), Cambridge University Press, 157.
12. Alexander, D. R., Augason, G. C., and Johnson, H. R., 1989, "An Opacity-Sampled Treatment of Water Vapor", *Astrophysical Journal*, **345**, 1014.
13. Brown, J. A., Johnson, H. R., Alexander, D. R., Cutright, L. C., and Sharp, C., 1989, "Model Atmospheres for K and M Giants", *Astrophysical Journal Supplement*, **71**, 623.
14. Alexander, D. R. and Ferguson, J. W., 1994, "Improvements in the Computation of Grain Opacity," in *Molecular Opacities in the Stellar Environment*, U. G. Jorgensen (ed.), Springer-Verlag, 149.
15. Goebel, J. H., Goorvitch, D., Alexander, D. R., and Larson, H. P., 1993, "A Deep Envelope Composition for TX Piscium", *Astrophysical Journal*, **402**, 680.
16. Swenson, F.J., Faulkner, J., Iglesias, C.A., Rogers, F.J., and Alexander, D.R., 1994, "The Classical Hyades Lithium Problem Resolved?," *Astrophysical Journal*, **422**, L79.
17. Alexander, D.R. and Ferguson, J.W., 1994, "Low Temperature Rosseland Opacities," *Astrophysical Journal*, **437**, 879.

18. Johnson, H. R., Alexander, D. R., and Bowen, G. H., 1994, "Miras and Planetary Nebulae: Can Radiative Force on Molecules Increase Mass Loss?," *Annals of the Israel Physical Society*, **11**, 98.
19. Johnson, H. R., Ensmann, L. M., Alexander, D. R., Avrett, E. H., Brown, A., Carpenter, K. G., Eriksson, K., Jørgensen, U. G., Judge, P. D., Linsky, J. L., Luttermoser, D. G., Querci, F., Querci, M., Robinson, R. D., and Wing, R. F., 1995, "Outer Layers of a Carbon Star: The View from HST," *Astrophysical Journal*, **443**, 281.
20. Alexander, D. R., 1995, "Low Temperature Rosseland Opacities," in *Astrophysical Applications of Powerful New Databases*, S. J. Adelman & W. L. Wiese (eds.), Astronomical Society of the Pacific, 63.
21. Hauschildt, P.H., Allard, F., Alexander, D. R., Schweitzer, A., and Baron, E., 1996, "NLTE Model Atmospheres for M Dwarfs and Giants," in *Stellar Surface Structure*, K. Strassmeier and J. L. Linsky (eds), Kluwer, 539.
22. Allard, F., Hauschildt, P.H., Alexander, D.R., and Starrfield, S., 1997, "Model Atmospheres of Very Low Mass Stars and Brown Dwarfs," in *Annual Reviews of Astronomy & Astrophysics*, Annual Reviews, Inc., **35**, 137.
23. Hauschildt, P.H., Allard, F., Alexander, D.R., and Baron, E., 1997, "Non-Local Thermodynamic Equilibrium Effects of Ti I in M Dwarfs and Giants," *Astrophysical Journal*, **488**, 428.
24. Alexander, D. R., Brocato, E., Cassisi, S., Castellani, V., Ciacio, F., & Degl'Innocenti, S., 1997, "A Theoretical Approach to Globular Cluster Low Main Sequence Stars," *A&A*, **317**, 90.
25. Alexander, D. R., Allard, F., Tamanai, A., and Hauschildt, P. H., 1997, "Grain Formation in Atmospheres of Cool Dwarfs," *Astrophysics and Space Science*, **251**, 171.
26. Allard, F.; Alexander, D. R.; Hauschildt, P. H., 1998, "Model Atmospheres of Very Low Mass Stars and Brown Dwarfs," in *The Tenth Cambridge Workshop on Cool Stars, Stellar Systems and the Sun*, R. A. Donahue and J. A. Bookbinder (eds), (San Francisco: Astronomical Society of the Pacific), 63.
27. Allard, F., Alexander, D. R., Tamanai, A., & Hauschildt, P.H. 1998, "Photospheric Dust Formation in Brown Dwarfs," in *Brown Dwarfs and Extrasolar Planets*, ed. by R. Rebolo; E.L.Martin; M.R. Zapatero Osorio, (San Francisco: Astronomical Society of the Pacific), 438.
28. Alexander, D. R., Allard, F., Tamanai, A., and Hauschildt, P. H. 1998, "Grain Formation in Atmospheres of Cool Dwarfs," in *Dust and Molecules in Evolved Stars*, I. Cherneff and T. J. Millar (eds.), Kluwer, 171.
29. Alexander, D. R., Ferguson, J. W., Wing, R. F., Johnson, H. R., Hauschildt, P. H., and Allard, F., 1999, "Effective Temperature Scales of Red Giant Stars," in *Asymptotic Giant Branch Stars*, T. le Bertre, A. Lebre, and C. Waelkens (eds.), Astronomical Society of the Pacific, 84.
30. Hauschildt, P. H., Allard, F., Ferguson, J. W., Baron, E., and Alexander, D. R., 1999, "The NextGen Model Atmosphere Grid: II. Spherically Symmetric Model Atmospheres for Giant stars with effective Temperatures between 3000 and 6800 K," *Astrophysical Journal*, **525**, 871.
31. Allard, F., Hauschildt, P. H., Alexander, D. R., Cohen, M., and Augason, G. C., 2000, "Modeling the M-S-C Giants Spectral Sequence", in *The Carbon Star Phenomenon*, R. F. Wing (ed.), Kluwer Academic Publishers, 517.
32. VandenBerg, D. A., Swenson, F. J., Rogers, F. J., Iglesias, C. A., and Alexander, D. R., 2000,

- “Models of Old, Metal-Poor Stars with Enhanced Alpha-element Abundances. I. Evolutionary Tracks and ZAHB Loci; Observational Constraints”, *Astrophysical Journal*, **532**, 430.
33. Allard, F, Hauschildt, P. H., Alexander, D. R., Tamanai, A., and Schweitzer, A., 2001, “The Limiting Effects of Dust in Brown Dwarf Model Atmospheres”, *Astrophysical Journal*, **556**, 357.
 34. Ferguson, J. W., Alexander, D. R., Allard, F., and Hauschildt, P. H., 2001, “Grains in the Atmospheres of Red Giant Stars”, *Astrophysical Journal*, **557**, 798.
 35. Kim, Y.-C., Demarque, P., Yi, S. K., and Alexander, D. R., 2002, “The Y^2 Isochrones for α -Element Enhanced Mixtures”, *Astrophysical Journal Supplement*, **143**, 499.
 36. Ferguson, J. W., Alexander, D. R., Tamanai, A., Bodnarik, J., Hauschildt, P. H., & Allard, F., 2003, “Physics and Chemistry of Molecules and Dust at Low Temperatures”, *Scientific Frontiers in Research on Extrasolar Planets*, ASP Conference Series, 294, (Ed. Drake Deming & Sara Seager), 539.
 37. Ferguson, J. W., Alexander, D. R., Allard, F., Barman, T., Bodnarik, J. G., Hauschildt, P. H.; Heffner-Wong, A., & Tamanai, A., 2005, “Low-Temperature Opacities”, *Astrophysical Journal*, **623**, 585.
 38. Ferguson, Jason W., Heffner-Wong, Amanda, Penley, Jonathan J., Barman, Travis S., & Alexander, David R., 2007, “Grain Physics and Rosseland Mean Opacities”, *Astrophysical Journal*, **666**, 261.

Non-refereed:

1. Alexander, D. R. (ed.), 1976, “Wichita State University: A University in Transition”. (university accreditation self-study)
2. Alexander, D. R., 1979, “Leadership and Management Development Project at Wichita State University”.
3. Alexander, D. R., 1979, “A Public Observatory for the Wichita, Kansas Area”, *Planetarian*, **8**, 11.
4. Alexander, D. R., 1979, “A Public Observatory for the Wichita, Kansas Area”, *The Plains Planetarian*, **6**, 1.
5. Riggs, J. D. and Alexander, D. R., 1983, “An Automated, Sky-Compensating Photometer with a Silicon Photodiode”, *Comm. of IAPPP*, **14**, 45.
6. Alexander, D. R. and Cornelius, 1984, “Concentrated Physics Concepts”, (New York: John Wiley & Sons). (computer software)
7. Alexander, D. R., Foster, D. L., and Unruh, H., Jr., 1988, “Dynamic Astronomy Demonstrations”, (Agoura Hills, CA: West Educational Publishing). (computer software)
8. West, J. D., and Alexander, D. R. 2001, “Photometry and Spectrophotometry of the New Variable Star IRAS 20192+3025,” *Information Bulletin on Variable Stars*, #5198.

PRESENTATIONS:

International (paper or abstract published):

1. “A New Treatment of Water Vapor Opacity”, 1985, Symposium 122 of the International Astronomical Union at Heidelberg, West Germany.
2. “Fluxes in M Giants with Improved Water Vapor Opacity”, 1988, Colloquium 106 of the

International Astronomical Union at Bloomington, Indiana, USA.

3. "Comparison of Blanketing in a 3000 K, Oxygen-Rich, Spherically Symmetric Model with the Blanketing in non-Mira, M Giant Stars", 1988, Colloquium 106 of the International Astronomical Union at Bloomington, Indiana, USA.
4. "Improvements in the Computation of Grain Opacity," (invited review) 1993, Colloquium 146 of the International Astronomical Union at Copenhagen, Denmark.
5. "Educational Programs at the Lake Afton Public Observatory," 1994, General Assembly of the International Astronomical Union, The Hague, The Netherlands.
6. "Low Temperature Rosseland Opacities," 1994, General Assembly of the International Astronomical Union, The Hague, The Netherlands.
7. "The Classical Hyades Lithium Problem Resolved?," 1994, General Assembly of the International Astronomical Union, The Hague, The Netherlands.
8. "Miras and Planetary Nebulae: Can Radiative Force on Molecules Increase Mass Loss?," 1994, International Conference on Asymmetrical Planetary Nebulae, Haifa, Israel.
9. "NLTE Model Atmospheres for M Dwarfs and Giants," IAU Symposium 176, 1996.
10. "Modeling the M-S-C Giant Spectral Sequence," IAU Symposium 177, Antalya, Turkey, 1996.
11. "Grain Formation in Atmospheres of Cool Dwarfs", CCCP7 Workshop on Dust and Molecules in Evolved Stars, Manchester, England, 1997.
12. "Grain Formation in Brown Dwarfs Atmospheres", 10th Cool Stars, Stellar Systems and the Sun Workshop, Cambridge, Massachusetts, 1997
13. "Effective Temperature Scales of Red Giant Stars ," IAU Symposium 191, Montpellier, France, 1998
14. "The Formation of PAHs in Carbon Star Atmospheres," IAU Symposium 191, Montpellier, France, 1998
15. "Grain Opacities in Cool Stellar Atmospheres," Alexander, Tamanai, Ferguson, Allard, Hauschildt, (Invited) From Giant Planets to Cool Stars Workshop, Flagstaff AZ, June, 1999
16. "Optical Constants and Opacity of Solid Materials," Tamanai and Alexander, From Giant Planets to Cool Stars Workshop, Flagstaff AZ, June, 1999
17. "Extinction Efficiency of Astrophysical Solid Materials," Tamani, Alexander, and Ferguson, Annual Scientific Meeting of the Astronomische Gesellschaft at the Joint European and National Meeting, Munich, Germany, 2001
18. "Opacities of Molecules and Dust," Alexander, Ferguson, Tamanai, Vukovich, Allard, and Hauschildt, (Invited) Workshop on Stellar Atmosphere Modeling, Tubingen, Germany, April, 2002
19. "Optical Constants and Extinction Efficiency of Solid Materials," Tamanai, Alexander, Ferguson, and Sedlmayr, Workshop on Stellar Atmosphere Modeling, Tubingen, Germany, April, 2002
20. "Model Atmospheres and Spectra: The Role of Dust," Allard, Guillot, Ludwig, Hauschildt, Schweitzer, Alexander, Ferguson, IAU Symposium on Brown Dwarfs, Honolulu, Hawaii, May, 2002
21. "Physics and Chemistry of Molecules and Dust at Low Temperatures," Ferguson, Alexander, Tamanai, Bodnarik, Hauschildt, Allard, Scientific Frontiers in Research on Extrasolar Planets, Washington, DC, June, 2002
22. "Absorption Features of Heterogeneous Grains in Oxygen-rich Circum-stellar Environments," Tamani, Sedlmayr, Alexander, Ferguson, Annual Scientific Meeting of the Astronomische Gesellschaft, Berlin, September, 2002

23. "Chemical Equilibrium of Dust at Low Temperature," Ferguson, Alexander, Allard, Hauschildt, Astrophysics of Dust Conference, Estes Park, CO, June, 2003
24. "Low Temperature Dust Opacity," Alexander, Ferguson, Allard, Hauschildt, Astrophysics of Dust Conference, Estes Park, CO, June, 2003
25. "Absorption Features of Heterogeneous Grains in Oxygen-rich Circum-stellar Environments," Tamani, Sedlmayr, Alexander, Ferguson, Annual Scientific Meeting of the Astronomische Gesellschaft, Berlin, September, 2002

National (abstract published):

1. "On Model Atmospheres for Cool Giant Stars", American Astronomical Society, Louisiana State University, 1971.
2. "Molecular Opacities in Cool Carbon Stars", American Astronomical Society, Amherst College, 1971.
3. "Molecules in Atmospheres of Cool Giant Stars", Molecular Spectroscopy Symposium, Ohio State University, 1971.
4. "On the Helium-burning Evolution of Solar Mass Stars", American Astronomical Society, Michigan State University, 1972.
5. "Nature of Imaginary Potential in Heavy-ion Scattering", American Physical Society, Washington, D.C. December, 1972.
6. "The Structure of Red Giant Envelopes", American Astronomical Society, Ohio State University, 1973.
7. "Low Temperature Rosseland Opacities", American Astronomical Society, Indiana University, 1975.
8. "A Re-analysis of the Eclipsing Binary CM Lacertae", American Astronomical Society, Haverford College, 1976.
9. "Planned Change and Faculty Development", POD Network, Shangri-La, OK, 1978.
10. "Lake Afton Public Observatory", American Astronomical Society, Univ. of Colorado, 1982.
11. "Concentrated Physics Concepts: A Comprehensive Package of Tutorial Problem Solving Programs", National Educational Computing Conference, Baltimore, MD, 1983.
12. "Are Carbon Stars Hydrogen Deficient", American Astronomical Society, Baltimore, Md., 1984.
13. "Concentrated Physics Concepts: Workshop on Physics Courseware", American Association of Physics Teachers, San Antonio, TX, 1984.
14. "A New Treatment of Water Vapor Opacity", American Astronomical Society, Univ. of Virginia, 1985.
15. "A New Treatment of Water Vapor Opacities in Stellar Atmosphere Models", American Astronomical Society, Iowa State Univ., 1986.
16. "Opacity Sampled, Spherically Extended Model Atmospheres for Cool Stars", American Astronomical Society, Vancouver, B.C., Canada, 1987.
17. "The Effect of C/O Ratio on the Blackwell-Shallis Method of Determining Stellar Temperatures for Cool Evolved Stars," American Astronomical Society, Pasadena, CA, 1987.
18. "Molecules and the Structure of Spherically Extended Model Atmospheres", Astronomical Society of the Pacific, Pamaona, CA, 1987.
19. "Observed Blanketing of Non-Mira AGB Stars", Astronomical Society of the Pacific, Pamaona, CA, 1987.

20. "Third Generation Low Temperature Rosseland Opacities", American Astronomical Society, Univ. of Michigan, 1989.
21. "High Resolution FTS Observations of WZ Cas & TX Psc at 2.5 microns Compared to Model Atmospheres," American Astronomical Society, Washington, D.C., 1990.
22. "The Effects of Grains on Rosseland and Planck Mean Opacities", American Astronomical Society, Columbus, OH, 1992.
23. "Educational Programs at the Lake Afton Public Observatory," American Astronomical Society, Minneapolis, MN, 1994
24. "Low Temperature Rosseland Opacities," American Astronomical Society, Minneapolis, MN, 1994
25. "A New Verification of T_{eff} , g , and C/O for ι Gem," American Astronomical Society, Tucson, AZ, 1995
26. "M Stars Model Atmospheres: Spectra and Colors," American Astronomical Society, San Antonio, TX, 1996
27. "An Exploratory Model Atmosphere for the Brown Dwarf Gl229B," American Astronomical Society, San Antonio, TX, 1996
28. "Low Temperature Grain Opacities," American Astronomical Society, San Diego, CA, 1998
29. "The Formation of PAHs in Carbon Star Atmospheres," American Astronomical Society, San Diego, CA, 1998
30. "Collaboratives for the Improvement of Science and Mathematics Education," Association for the Education of Teachers of Science Annual Conference, Austin, TX, 1999
31. "Are We Producing Clones? A Profile of Faculty and Student Science Beliefs and Classroom Environments," 1999 National Association for Research in Science Teaching Annual Meeting, Boston, MA
32. "Education Majors as Physics TAs," 1999 National Association for Research in Science Teaching Annual Meeting, Boston, MA
33. "Professional-Amateur Collaboration in Late-Type Star Research," American Astronomical Society, Rochester, NY, 2000
34. "Helping the Public Touch the Stars -- Programs of the Lake Afton Public Observatory," American Astronomical Society, San Diego, CA, 2001
35. "Grains in the Atmospheres of Late Type Stars," American Astronomical Society, San Diego, CA, 2001
36. "Raytheon Teaching Fellows Program," Association for the Education of Teachers of Science, Orange County, CA, 2001

National (abstracts not published):

1. "The Wichita State Approach" and "Academic Planning and Program Review", Kellogg Dissemination Project Conference, Akron, OH, 1980.
2. "How did Dissemination Help", Kellogg Dissemination Project Follow-Up Conference, Akron, OH, 1981.

Seventeen additional papers have been delivered at regional conferences.

Harlow Shapely Visiting Lecturer for the American Astronomical Society at University of Louisville (2001), Cloud County (KS) Community College (2001), University of Wisconsin-Stout (2001), Jamestown Community College (1999), Valley City State College (1988, 1990),

Central Michigan University (1989), Creighton University (1990), Lake Michigan College (1992), and Centre College (1993).

Colloquia have been presented at Kansas University (3), University of Missouri, Oklahoma State University, University of Arkansas (2), Indiana University (7), University of Missouri at St. Louis, and Los Alamos National Laboratory. Over 100 public lectures on astronomical topics have been presented to a variety of college and civic groups in Wichita and across the state to more than 5,000 people.

GRANTS (total funding of \$5.6 million):

1. Research Corporation, Stellar hydrodynamics, 1973, \$30,000
2. WSU Research Committee, Envelopes of red giant stars, 1974, \$3,800
3. NSF ISEP (co-PI), Social science computation lab, 1977, \$31,800
4. Wichita/Sedgwick County/USD 259/WSU, Public observatory, 1979, \$249,000
5. W.K. Kellogg Foundation (co-PI), Dissemination of planned change, 1979, \$90,370
6. NSF CAUSE (co-PI), Classroom use of micro-computers, 1979, \$407,000
7. WSU Research Committee, Research equipment at Lake Afton Public Observatory, 1981, \$3,500
8. National Academy of Science - V.M. Slipher Award, Astronomy computer programs, 1981, \$1,315
9. NSF CAUSE Sub-proposal, Astronomy computer programs, 1981, \$3,100
10. NSF Research Supercomputer Supplement (co-PI), Purchase microcomputers, 1984, \$8,549
11. NASA Research Consortium (co-PI), Travel grant, 1984, \$4,965
12. WSU Research Committee, Purchase microcomputer equipment, 1985, \$4,000
13. NSF Research (co-PI), Atmospheres of cool stars, 1986-1989, \$299,229
14. NASA/Ames Research Center, Supercomputer time, 1984-1990, \$400,000
15. Greyhound Charities, Meteorite Exhibit for Lake Afton Public Observatory, 1990, \$2,340
16. WSU Capital Equipment, Computerization of introductory physics labs, 1991, \$8,900
17. NSF Research (co-PI), Atmospheres of cool stars, 1992-1995, \$297,294
18. NSF EPSCoR, Educational Activities at Lake Afton Public Observatory, 1992-1995, \$90,000
19. WSU Mill Levy, Computer Aided Instruction in Physics, 1993, \$4,526
20. Space Telescope Science Institute (co-PI), Spectra and Chromospheres of Carbon & M Stars, 1993-1994, \$110,132 & 16 hours of telescope time
21. AAS International Travel Grant, 1993, \$997
22. Wichita Public Schools, Operating Funds for Lake Afton Public Observatory, 1980-1994, \$477,000
23. Space Telescope Science Institute (co-PI), Spectra and Chromospheres of Carbon & M Stars, 1994-1995, \$103,146. & 5 hours of telescope time.
24. University Research/Creative Projects Award, Red Giant Stars: Atmospheric Opacities and Models, 1995-1996, \$4,280.
25. NSF Systemic Initiative, Bringing the Universe to the Classroom: A Program to Stimulate Interest in Science in the Chapter 1 Schools of Wichita, Kansas and in the Rural Areas of Kansas, 1996-1997, \$10,000.
26. NASA LTSA, Spectroscopic Properties of (Sub)stellar Objects, 1996-2005, \$266,328.
27. NASA EPSCoR, Low Temperature Astrophysics: Cool Stars, Opacities, and the Interstellar Medium, 1996-2002, \$639,684.

28. Kansas Board of Regents, Project STAMPEDE: Science, Technology and Mathematics-- Propelling Educational Directives toward Excellence, 1997-1999, \$175,650.
29. Boeing Commercial Airplane Group, Learning Centers Development and Planning Grant, 1998, \$35,850
30. NSF EPSCoR, Acquisition of a High Performance Computer for Wichita State University, 1999-2000, \$437,144
31. Boeing Commercial Airplane Group, Lending Kit Program, 1999, \$35,850
32. Raytheon Corp., Raytheon Teaching Fellows Program, 2000-2003, \$500,000
33. Boeing Corp., Lending Kit Program, 2000, \$35,850
34. Boeing Corp., Learning Centers/Lending Kits for Science and Mathematics Education, 2001, \$34,000
35. NASA IDEAS, Solar Observing at Exploration Place (co-PI), 2001, \$9,382
36. Raytheon Corp., Wichita Aerospace Transition to Teaching (co-PI), 2001-2004, \$236,875
37. NSF HPNC, High-Performance Network Connection in Support of Meritorious Research at Wichita State University, 2001-2003, \$150,000
38. NSF MRI, Acquisition of High Performance Computer for Wichita State University, 2002-2004, \$338,672
39. NSF EPSCoR, Expansion of High Performance Computing at Wichita State University, 2003-2004, \$124,085
40. Boeing Corp., Learning Centers/Lending Kits for Science and Mathematics Education, 2003, \$10,000

CONSULTING:

1. Saginaw Valley State College - May 2-3, 1979 and Nov. 7-8, 1979, Academic program planning
2. Valparaiso University - May 30-31, 1979, Academic program planning
3. Los Alamos National Lab., Dec. 6-7, 1979, Opacity Calculations
4. Chadron State College - Nov. 15-16, 1980, Academic program planning
5. SUNY, Potsdam - Oct. 20-22, 1980, Academic program planning
6. College of Our Lady of the Elms - Oct. 22-24, 1980; Jan. 20-22, 1981, Academic program planning
7. Reviews for Astrophysical Journal, Science magazine, NASA, National Science Foundation, American Astronomical Society, Kansas Academy of Science, Prentice-Hall, Benjamin/Cummings, Spectrum Books, Wadsworth, Macmillan, and John Wiley & Sons

MAJOR COMMITTEE ASSIGNMENTS:

- | | |
|--|-----------|
| 1. Computer Policy Committee
(Chair of several subcommittees and task forces) | 1973-1983 |
| 2. LAS OOE Budget task force | 1974-1975 |
| 3. NCA Accreditation Self-study Steering Committee
Chair of Faculty and Learning Resources Task Force | 1975-1977 |
| 4. Kellogg Planning Task Force (Chair) | 1977-1979 |
| 5. General Education Committee (Chair) | 1981-1983 |
| 6. NCA Self-study Institutional Mission and Governance Committee | 1985-1986 |
| 7. LAS Curriculum and Academic Policy Committee | 1987-1990 |

(Secretary, 1988-1990)	
8. Program Coordinator for planning and construction of Science Classroom and Laboratory Building	1986-1992
9. Coordinator of Kansas Science Bowl	1988-1990
10. Education Advisory Board of the American Astronomical Society	1988-1991
11. Faculty Senate (President-elect, 1989-1990; President, 1990-1991)	1989-1992
12. Senate Executive Committee	1989-1992
13. Senate Rules Committee (Chair)	1989-1990
14. Academic Affairs Definitions Committee	1990
15. Provost Search Committee	1990-1991
16. University Capital Improvement Planning Committee	1990-1991
17. University Advancement Definitions Committee (Chair)	1990-1991
18. Vice President for University Advancement Search Committee (Chair)	1991
19. <i>ad hoc</i> Committee on Tenure and Promotion Policy (Chair)	1991-1993
20. Language Competency Committee	1991-1993
21. Program Review Committees (Chair of both natural science & university committees)	1992
22. Computer Science Department Chairperson Search Committee	1992-1993
23. Science Building Dedication Committee	1992-1993
24. Long Range Planning Task Force	1994
25. LAS Centennial Committee	1994-1995
26. NCA Accreditation sub-committee on Criterion 4	1995-1996
27. Watkins Program Committee	1995-1998
28. Kansas Computer Planning Committee	1995-1997
29. President's Task Force on Academic Program Review	1996-1997
30. University Tenure & Promotion Review Committee	1997-2000
31. College of Education Mission Task Force	1998-1999
32. LAS College Council (Chair, 2001-2002)	2000-2003
33. College of Education Technology Advisory Committee	2001-2003
34. Research Opportunities Committee	2001-2002
35. Cooperative Education Advisory Council	2000-2003
36. General Education for Teacher Licensure Committee (Chair)	2002-2003
37. Information Technology Committee	2002-2003
38. Middle School Science Teacher Licensure (Chair)	2003-2004
39. WIN Leadership Team (Chair)	2004-2006
40. ERP Executive Steering Committee (chair)	2006-present
41. Vice President for Finance & Administration Search Committee	2007

CURRICULUM DEVELOPMENT:

1. Initiated astronomy program at WSU, including seven new courses: 195G (Intro. to Modern Astronomy), 196 (Modern Astronomy Lab.), 198 (Discovery in Astronomy), 395G (Solar System Astronomy), 590 (Stellar Astrophysics), 595 (Galactic and Extragalactic Astronomy) and 601 (Individual Reading in Astrophysics)
2. Taught honors courses in four different semesters

3. Taught a large lecture section each semester for ten years
4. Taught astronomy course in NSF institute for school teachers
5. Coordinated course based on Cosmos TV-series; participated in three additional telecourses
6. Taught non-credit continuing education courses in astronomy
7. Created Computational Physics Laboratory (616) course