

VITA

Bruce A. Wilking

Department of Physics & Astronomy
University of Missouri-St. Louis
1 University Boulevard
St. Louis, Missouri 63121
Phone: (314) 516-5023
Email: bwilking@umsl.edu

Personal:

Birthdate: March 24, 1954
Birthplace: Decatur, Illinois
Citizenship: USA

Education:

B.S. in Astronomy, Univ. of Illinois, Urbana, Illinois, 1976
Ph.D. in Planetary Science, Univ. of Arizona, Tucson, Arizona, 1981
(Advisors: Charles Lada and George Rieke)

Employment:

9/10-present Associate Chairperson, Dept. of Physics & Astronomy, Univ. of Missouri-St. Louis
9/93-present Professor of Astronomy, Univ. of Missouri-St. Louis
9/00-9/10 Chairperson, Dept. of Physics & Astronomy, Univ. of Missouri-St. Louis
9/90-8/91 Visiting Scientist, Harvard-Smithsonian Center for Astrophysics
9/88-9/93 Associate Professor of Astronomy, Univ. of Missouri-St. Louis
9/84-9/88 Assistant Professor of Astronomy, Univ. of Missouri St. Louis
9/83-9/84 Lecturer in the Astronomy Department, University of Texas at Austin
8/81-9/84 Postdoctoral research associate in the Astronomy, Department, Univ. of Texas at Austin
9/76-8/81 Graduate research assistant in Planetary Sciences, University of Arizona

Scholastic Honors:

Phi Beta Kappa, 1975
Magna Cum Laude, Highest Distinction in Astronomy, University of Illinois, 1976

Membership in Professional Societies:

American Astronomical Society
Sigma Xi

Recent Presentations:

- *Brown Dwarfs in Young Star Clusters*, colloquium presented at Truman State University, February 2007
- *Multi-Epoch VLBI Observations of Water Masers Associated with NGC 1333/IRAS4A and IRAS4B*", poster presentation at Transformational Science with ALMA: Through Disks to Stars and Planets, Charlottesville, VA, June 2007.
- *The Surface Population of the Serpens Molecular Cloud*, poster presentation at the 212th meeting of the American Astronomical Society, St. Louis, MO, June 2008.
- *Star Formation in the Rho Ophiuchi Molecular Cloud: A Laboratory for Low Mass Star Formation*, O.M. Stewart Colloquium, University of Missouri-Columbia, February 2009.

- *A Giant Planet Imaged in the Disk of the Young Star Beta Pictoris*, Journal Club, University of Missouri-St. Louis, November 2010
- *Astronomy from the Stratosphere: NASA's New Airborne Observatory*, St. Louis Astronomical Society, Washington University, January 2011
- *Echelle Spectra of Candidate Young Stellar Objects in the Serpens Main Cluster*, poster presentation at the 219th meeting of the American Astronomical Society in Austin, TX, January 2012

Research Grants:

Internal Awards:

- 1984--UMSL Improved Research Quality, \$6,243. *Theoretical and Observational Studies of the Formation of Star Clusters*
- 1985--Univ. of Missouri - Weldon Spring Research Award, \$12,615, *The Formation of Star Clusters*
- 1986--UMSL - Summer Research Fellowship, \$3,500, *Infrared Observations and Theoretical Models of Young Star Clusters*
- 1989--Univ. of Missouri - Weldon Spring Research Award, \$11,000, *Low Mass Star Formation in Southern Molecular Clouds*
- 1994--Univ. of Missouri Research Board, \$27,700, *The Relationship between Water Masers and Star Formation*
- 1994--UMSL, \$8,684, *High Resolution Observations of Water Masers Associated with Low Mass Stars*
- 2001--Univ. of Missouri Research Board, \$19,820, *Brown Dwarfs in the NGC 1333 Star-Forming Cloud*
- 2008--Univ. of Missouri Research Board, \$15,300, *The First Wave of Star Formation in the Ophiuchus and Serpens Molecular Clouds*
- 2011--UMSL College of Arts & Sciences Research Award, \$5760, *Spectroscopic Surveys of Young Star Clusters: Constraining the Physics of Star Formation*

External Awards:

- 1986--NASA, \$18,800, *An IRAS General Investigator Program Proposal to Study the Luminosity Functions of Young Dust-Embedded Clusters.*
- 1987--NASA, \$20,866, *A SADAP Proposal to Study the Luminosity Functions of Young Dust-Embedded Clusters.*
- 1989--NASA, \$24,000, *An ADP Proposal to Study the Formation and Evolution of Dust-Embedded Clusters.*
- 1991--NASA, \$31,273, *Comparative Studies of Dust-Embedded Populations.*
- 1991--NATO, \$4,800, *Evolution of Pre-Main Sequence Binary Stars.*
- 1993--NATO, \$4,950, *Evolution of Pre-Main Sequence Binary Stars.*
- 1995-1996, NSF, \$60,938, *Toward the Mass Function of the Rho Ophiuchi Infrared Cluster.*
- 1997--NSF, \$2,000, *Supplement for Research Experience for Undergraduates.*
- 1998--NASA, \$51,400, *The Nature of Weak Radio Sources in the Rho Oph Core.*
- 1999--2002, NSF, \$129,406, *Substellar Populations and the Mass Functions in Young Clusters.*
- 2004--NASA, \$13,142, *The Origins of Substellar Masses*
- 2004--NASA, \$41,698, *NASA/Missouri Space Grant Consortium: UM-St. Louis Program.*
- 2005-2010, NASA, \$244,509, *NASA/Missouri Space Grant Consortium: UM-St. Louis Program.*
- 2011-2012, NASA, \$101,782, *NASA/Missouri Space Grant Consortium: UM-St. Louis Program.*

Published Papers:

1. *Stellar Occultations by Turbulent Planetary Atmospheres: A Wave Optical Theory Including a Finite Scale Height*, Hubbard, W. B., Jokipii, J. R., and Wilking, B. A., **Icarus**, v34, 374-395, 1978.
2. *Infrared Polarimetry in the Rho Ophiuchi Dark Cloud*, Wilking, B. A., Lebofsky, M. J., Rieke, G. H., and Kemp, J. C., **Astronomical Journal**, v84, 199-203, 1979.
3. *The Wavelength Dependence of Interstellar Linear Polarization*, Wilking, B. A., Lebofsky, M. J., Martin, P. G., Rieke, G. H., and Kemp, J. C., **Astrophysical Journal**, v235, 905-910, 1980.
4. *¹³CO Self-Absorption in the Rho Ophiuchi Dark Cloud*, Lada, C. J. and Wilking, B. A., **Astrophysical Journal**, v238, 620-626, 1980.
5. *Infrared Observations of B35: Heat Sources for Bright-Rimmed Molecular Clouds*, Lada, C. J., and Wilking, B. A., **Astrophysical Journal**, v242, 1056-1062, 1980.
6. *Far-Infrared Photometry of Compact Extragalactic Objects: Detection of 3C 345*, Harvey, P. M., Wilking, B. A., and Joy, M., **Astrophysical Journal Letters**, v254, L29-L30, 1982.
7. *The Wavelength Dependence of Interstellar Linear Polarization: Stars with Extreme Values of λ_{max}* , Wilking, B. A., Lebofsky, M. J., and Rieke, G. H., **Astronomical Journal**, v87, 695-697, 1982.
8. *Far-Infrared Observations of Optical Emission Line Stars II*, Harvey, P.M., and Wilking, B.A., **Publications of the Astronomical Society of the Pacific**, v94, 285-288, 1982.
9. *Far-Infrared Observations of Low-Mass Star Formation in Orion: H-H Objects*, in Symposium on the Orion Nebula to Honor Henry Draper, Harvey, P. M., Wilking, B. A., and Cohen, M., **Annals of the New York Academy of Sciences**, v395, 199-203, 1982. (non-refereed)
10. *The Discovery of New Embedded Sources in the Centrally Condensed Core of the Rho Ophiuchi Dark Cloud: The Formation of a Bound Cluster?*, Wilking, B. A., and Lada, C. J., **Astrophysical Journal**, v274, 698-716, 1983.
11. *Infrared Observations of Dust Cloud Structure in Young R Associations: NGC 1333, S 68, and NGC 7129*, Harvey, P. M., Wilking, B. A., and Joy, M., **Astrophysical Journal**, v278, 156-169, 1984.
12. *The Formation of Massive Stars Along the W5 Ionization Front*, Wilking, B. A., Harvey, P. M., Lada, C. J., Joy, M., and Doering, C. R., **Astrophysical Journal**, v279, 291-303, 1984.
13. *Far-Infrared Studies of Herbig-Haro Objects and Their Exciting Stars*, Cohen, M., Harvey, P. M., Schwartz, R. D., and Wilking, B. A., **Astrophysical Journal**, v278, 671-678, 1984.
14. *On the Far-Infrared Excess of Vega*, Harvey, P. M., Wilking, B. A., and Joy, M., **Nature**, v 307, 441-442, 1984.
15. *Infrared and Millimeter-Wave Observation of the Sharpless 156 Molecular Cloud*, Joy, M., Evans, N. J., II, Harvey, P. M., and Wilking, B. A., **Astrophysical Journal**, v284, 161-175, 1984.
16. *The Nature of the Embedded Population in the Rho Ophiuchi Dark Cloud: Mid-Infrared Observations*, Lada, C. J., and Wilking, B. A., **Astrophysical Journal**, v287, 610-621, 1984.

17. *High Resolution Far-Infrared Observations in the IC 5146 Dark Cloud*, Wilking, B. A., Harvey, P. M., and Joy, M., **Astronomical Journal**, v89, 496-500, 1984.
18. *Far-Infrared Observations of Southern Herbig-Haro Objects*, Cohen, M., Schwartz, R. D., Harvey, P. M., and Wilking, B. A., **Astrophysical Journal**, v281, 250-259, 1984.
19. *NGC 6334-V - An Infrared Bipolar Nebula*, Harvey, P. M., and Wilking, B. A., **Astrophysical Journal Letters**, v280, L19-L22, 1984.
20. *Far-Infrared Photometry of Compact Extragalactic Sources: OJ 287 and BL Lac*, Harvey, P. M., Joy, M., Lester, D. F., and Wilking, B. A., **Astrophysical Journal Letters**, v287, L9-L10, 1984.
21. *An Infrared Study of the Bipolar Outflow Region GGD 12-15*, Harvey, P. M., Wilking, B. A., Joy, M. and Lester, D. F., **Astrophysical Journal**, v288, 725-730, 1985.
22. *Far-Infrared Observation of Young Clusters Embedded in the R Coronae Australis and Rho Ophiuchi Dark Clouds*, Wilking, B. A., Harvey, P. M., Joy, M., Hyland, A. R. and Jones, T. J., **Astrophysical Journal**, v293, 165-177, 1985.
23. *The Chamaeleon Dark Cloud Complex II: A Deep Survey Around HD 97300*, Jones, T. J., Hyland, A. R., Harvey, P. M., Wilking, B. A., and Joy, M., **Astronomical Journal**, v90, 1191-1195, 1985.
24. *The Formation of Bound Clusters*, Wilking, B. A., and Lada, C. J., invited review paper appearing in **Protostars and Planets II**, eds., D. Black and M. S. Matthews (Tucson: Univ. of Arizona Press), 297-319, 1985.
25. *Star Formation in the Centrally Condensed Core of the Rho Ophiuchi Dark Cloud*, Wilking, B. A., invited review paper appearing in **Nearby Molecular Clouds**, ed. G. Serra (Berlin: Springer-Verlag), 104-117, 1985.
26. *An Infrared Study of the NGC 1977 HII Region/Molecular Cloud Interface*, Makinen, P. M., Harvey, P. M., Wilking, B. A., and Evans, N. J. II, **Astrophysical Journal**, v299, 341-350, 1986.
27. *High Angular Resolution Infrared Mapping of the Compact HII Regions W51 and DR21/W75*, Harvey, P. M., Joy, M., Lester, D. F., and Wilking, B. A., **Astrophysical Journal**, v300, 737-744, 1986.
28. *Infrared Studies of the HH 1-2 Region*, Harvey, P. M., Joy, M., Lester, D. F., and Wilking, B. A., **Astrophysical Journal**, v301, 346-354, 1986.
29. *The Circumstellar Environment of LkHa 234*, Wilking, B. A., Mundy, L. G., and Schwartz, R. D., **Astrophysical Journal Letters**, v303, L61-L65, 1986.
30. *High Resolution IRAS Observations of the Rho Ophiuchi Cloud Core*, Young, E. T., Lada, C. J., and Wilking, B. A., **Astrophysical Journal Letters**, v304, L45-L49, 1986.
31. *The Nature of the Infrared Cluster in the R Coronae Australis Cloud Core*, Wilking, B. A., Taylor, K. N. R., and Storey, J. W. V., **Astronomical Journal**, v92, 103-110, 1986.
32. *Spectroscopic Evidence for Infall around an Extraordinary IRAS Source in Ophiuchus*, Walker, C. K., Lada, C. J., Young, E. T., Maloney, P. R., and Wilking, B. A., **Astrophysical Journal Letters**, v309, L47-L51, 1986.

33. *Resolution of Structure in the Protostellar Source IRAS 16293-2422*, Mundy, L. G., Wilking, B. A., and Myers, S., **Astrophysical Journal Letters**, v311, L75-L79, 1986.
34. *Star Formation in the Magellanic Clouds III. IR Observations of Giant HII Regions*, Jones, T. J., Hyland, A. R., Straw, S., Harvey, P. M., Wilking, B. A., Joy, M., Gatley, I., and Thomas, J. A., **Monthly Notices of the Royal Astronomical Society**, v219, 603-627, 1986.
35. *Molecular Clouds in the Outer Galaxy I. Far-Infrared Observations*, Mead, K. N., Kutner, M. L., Evans, N. J., II, Harvey, P. M., and Wilking, B. A., **Astrophysical Journal**, v312, 321-326, 1987.
36. *An Active Star Formation Site in RCW 108*, Straw, S., Hyland, A. R., Jones, T. J., Harvey, P. M., Wilking, B. A., and Joy, M., **Astrophysical Journal**, v314, 283-296, 1987.
37. *Milliarcsecond Resolution Infrared Observations of Young Stars in Taurus and Ophiuchus*, Simon, M., Howell, R. R., Longmore, A. J., Wilking, B. A., Peterson, D. M., and Chen W.-P., **Astrophysical Journal**, v320, 344, 1987.
38. *An H α Emission-Line Survey of the Rho Ophiuchi Dark Cloud Complex*, Wilking, B. A., Schwartz, R. D., and Blackwell, J. H., **Astronomical Journal**, v94, 106-110, 1987.
39. *Water Masers Associated with Low Mass Stars: A Survey of the Rho Ophiuchi Infrared Cluster*, Wilking, B. A., and Claussen, M. J., **Astrophysical Journal Letters**, v320, L133-L137, 1987.
40. *Line Identifications in the Infrared Spectrum of SN1987A*, Elias, J. H., Gregory, B., Williams, R. E., Graham, J. R., Meikle, W. P. S., Schwartz, R. D., and Wilking, B. A., **Astrophysical Journal Letters**, v331, L9-L13, 1988.
41. *IRAS Observations of the Rho Ophiuchi Infrared Cluster: Spectral Energy Distributions and Luminosity Function*, Wilking, B. A., Lada, C. J., and Young, E. T., **Astrophysical Journal**, v340, 823-852, 1989.
42. *The Formation of Low Mass Stars*, Wilking, B. A., **Publications of the Astronomical Society of the Pacific**, v101, 229-243, 1989.
43. *Millimeter-Wave Spectral Line and Continuum Survey of Cold IRAS Sources*, Wilking, B. A., Mundy, L. G., Blackwell, J. H., and Howe, J. E., **Astrophysical Journal**, v345, 257-264, 1989.
44. *Shocked Molecular Hydrogen Emission from Herbig-Haro Objects and Their Exciting Stars*", Wilking, B. A., Schwartz, R. D., Mundy, L. G., and Schultz, A. S. B., **Astronomical Journal**, v99, 344-352, 1990.
45. *The Circumstellar Structure of IRAS 16293-2422: C¹⁸O, NH₃, and CO Observations*, Mundy, L. G., Wootten, H. A., and Wilking, B. A., **Astrophysical Journal**, v352, 159-166, 1990.
46. *High-Velocity Molecular Gas Associated with Cold IRAS Sources*, Wilking, B. A., Blackwell, J. H., and Mundy, L. G., **Astronomical Journal**, v100, 758-770, 1990.
47. *Cold DCO⁺ Cores and Protostars in the Warm Rho Ophiuchi Cloud*, Loren, R. B., Wootten, H. A., and Wilking, B. A., **Astrophysical Journal**, v365, 269-286, 1990.

48. *A Search for Embedded Young Stellar Objects in and Near the IC1396 Complex*, Schwartz, R. D., Gyulbudagian, A. L., and Wilking, B. A., **Astrophysical Journal**, v370, 263-271, 1991.
49. *Star Formation in the Ophiuchus Molecular Complex*, Wilking, B. A., invited review chapter in **Low Mass Star Formation in Southern Molecular Clouds**, ed. B. Reipurth, (Garching: European Southern Observatory), 159-183, 1991.
50. *IRAS 16293-2422: A Very Young Binary System?*, Mundy, L. G., Wootten, H. A., Wilking, B. A., Blake, G. A., and Sargent, A. I., **Astrophysical Journal**, v385, 306-313, 1992.
51. *IRAS Observations of Young Stellar Objects in the Corona Australis Dark Cloud*, Wilking, B. A., Greene, T. P., Lada, C. J., Meyer, M. R., and Young, E. T., **Astrophysical Journal**, v397, 520-533, 1992.
52. *Infrared Companions: Clues to Binary Star Formation*, Zinnecker, H. and Wilking, B., in **Binaries as Tracers of Stellar Formation**, ed. A. Duquennoy and M. Mayor, (Cambridge: Cambridge Univ. Press), 269-277, 1992. (non-refereed)
53. *Young Low Mass Stars in the Vicinity of σ Scorpii*, Meyer, M. R., Wilking, B. A., and Zinnecker, H., **Astronomical Journal**, v105, 619-629, 1993.
54. *Near-Infrared Images of Star-Forming Regions*, Zinnecker, H., McCaughrean, M. J., Rayner, J. T., Wilking, B. A., and Moneti, A., in **Reviews in Modern Astronomy 6, Stellar Evolution and Interstellar Matter**, ed. G. Klare, (Berlin: Springer-Verlag), pp. 191-208, 1993. (non-refereed)
55. *The Initial Stellar Population*, Zinnecker, H., McCaughrean, M., and Wilking, B., invited review chapter in **Protostars and Planets III**, eds. E. H. Levy, J. I. Lunine and M. S. Matthews (Tucson: Univ. of Arizona Press), 429-495, 1993.
56. *IRAS 21391+5802: A Study in Intermediate Mass Star Formation*, Wilking, B. A., Mundy, L. G., McMullin, J. P., Hezel, T., and Keene, J., **Astronomical Journal**, v106, 250-259, 1993.
57. *Structure and Chemistry in the Northwestern Condensation of the Serpens Molecular Cloud Core*, McMullin, J., Mundy, L. G., Wilking, B. A., Hezel, T., and Blake, G., **Astrophysical Journal**, v424, 222-236, 1994.
58. *Low-Luminosity Members of the R Coronae Australis Infrared Cluster*, Wilking, B., Giblin, T., McCaughrean, M., Rayner, J., Burton, M., and Zinnecker, H., in **Infrared Astronomy with Arrays: The Next Generation**, ed. I. McLean, (Dordrecht: Kluwer), pp. 17-20, 1994. (non-refereed)
59. *Further Mid-Infrared Study of the Rho Ophiuchi Cloud Young Stellar Population: Luminosities and Masses of Pre-Main-Sequence Stars*, Greene, T., Wilking, B., André, P., Lada, C., and Young, E., **Astrophysical Journal**, v434, 614-626, 1994.
60. *Water Masers Associated with Low Mass Stars: A 13 Month Monitoring Survey*, Wilking, B. A., Claussen, M. J., Benson, P. J., Terebey, S., and Wootten, H. A., **Astrophysical Journal Letters**, v431, L119-L122, 1994.

61. *A Monthly Survey of Water Masers Associated with Low Mass Stars*, Claussen, M. J., Wilking, B. A., Benson, P. J., Wootten, H. A., Myers, P. C., and Terebey, S., **Astrophysical Journal Supplement**, v106, 111-132, 1996.
62. *The Origin of Low Mass Stars*, invited review in the journal **Origin of Life and Evolution of the Biosphere**, v27, 135-155, 1997.
same text appears in the book **Planetary and Physical Processes Relevant to the Origin of Life**, ed. D. C. B. Whittet, (Kluwer: Dordrecht), 135-155, 1997.
63. *Herbig-Haro Objects in the Rho Ophiuchi Cloud*, Wilking, B. A., Schwartz, R. D., Fanetti, T. M., and Friel, E. D., **Publications of the Astronomical Society of the Pacific**, v109, 549-553, 1997.
64. *Deep Infrared Imaging in the R Corona Australis Cloud Core*, Wilking, B., McCaughrean, M., Burton, M., Giblin, T., Rayner, J., and Zinnecker, H., **Astronomical Journal**, v114, 2029-2042, 1997.
65. *Circularly Polarized Radio Emission from an X-Ray Protostar*, Feigelson, E., Carkner, L., and Wilking, B., **Astrophysical Journal Letters**, v494, L215-L218, 1998.
66. *Water Masers in the Circumstellar Environments of Young Stellar Objects*, Meehan, L., Wilking, B., Claussen, M. J., Mundy, L. G., and Wootten, A., **Astronomical Journal**, v115, 1599-1609, 1998.
67. *Distribution and Motion of the Water Masers Near IRAS 05413-0104*, Claussen, M. J., Marvel, K. B., Wootten, A., & Wilking, B. A., **Astrophysical Journal Letters**, v507, L79-L82, 1998.
68. *Spectroscopy of Brown Dwarf Candidates in the Rho Ophiuchi Molecular Core*, Wilking, B. A., Greene, T. P., & Meyer, M. R., **Astronomical Journal**, v117, 469-482, 1999.
69. *A Spectral Line Study of Serpens S68 FIRSI Region*, McMullin, J. P., Mundy, L. G., Blake, G. A., Wilking, B. A., & Mangum, J. G., **Astrophysical Journal**, v536, 835-856, 2000.
70. *Infrared Properties of Weak Radio Sources in the Rho Ophiuchi Molecular Cloud*, Wilking, B. A., Bontemps, S., Schuler, R., Greene, T. P., & André, P., **Astrophysical Journal**, v551, 357-366, 2001.
71. *Overview of Cluster Properties*, Wilking, B., invited review **From Darkness to Light: Origin and Evolution of Young Stellar Clusters**, eds. T. Montmerle & Ph. André, (ASP: San Francisco), pp. 353-366, 2001.
72. *Spectroscopy of Brown Dwarf Candidates in the NGC 1333 Molecular Cloud*, Wilking, B., Mikhail, A., Carlson, G., Meyer, M., & Greene, T., in **Brown Dwarfs: IAU Symposium 211**, ASP Conference Series Vol. 211, ed. E. L. Martin, (ASP: San Francisco), pp. 97-101, 2003.
73. *Low Mass Stars and Substellar Objects in the NGC 1333 Molecular Cloud*, Wilking, B., Meyer, M., Greene, T., Mikhail, A., & Carlson, G., **Astronomical Journal**, v127, 1131-1146, 2004.
74. *Optical Spectroscopy of the Surface Population of the Rho Ophiuchi Molecular Cloud: The First Wave of Star Formation*", Wilking, B. A., Meyer, M. R., Robinson, J. R., & Greene, T. P., **Astronomical Journal**, v130, 1733-1751, 2005.

75. *Coordinated Multiwavelength Observations of 3C 66A during the WEBT campaign of 2003-2004*, Boettcher, M., Tartar, J. B., Wilking, B. A., and 67 co-authors, **Astrophysical Journal**, v631, 169-186, 2005.
76. *Searching for proto-brown dwarfs: Extending near IR spectroscopy of protostars below the hydrogen-burning limit*, Covey, K., Greene, T., Doppmann, G., Lada, C., & Wilking, B., **Astronomische Nachrichten**, v326, 886-890, 2005.
77. *Testing the inverse-Compton catastrophe scenario in the intra-day variable blazar S5 0716+71 I. Simultaneous broadband observations during November 2003*", Ostorero, L., Tartar, J. B., Wilking, B. A., and 82 co-authors, **Astronomy & Astrophysics**, v451, 797-807, 2006.
78. *HST/NICMOS Observations of NGC 1333: The Ratio of Stars to Sub-stellar Objects*, Greissl, J., Meyer, M. R., Wilking, B. A., Fanetti, T., Schneider, G., Greene, T. P., and Young, E., **Astronomical Journal**, v133, 1321-1330, 2007.
79. *Time-Resolved AU-Scale Jets Traced by Masers in the IRAS-4A/B Regions in NGC 1333*, Marvel, K. B., Wilking, B. A., Claussen, M. J., & Wootten, H. A., **Astrophysical Journal**, v685, 285-297, 2008.
80. *Star Formation in the Rho Ophiuchi Molecular Cloud*, Wilking, B. A., Gagné, M., & Allen, L. E., invited review chapter in **Handbook of Star Forming Regions, Vol. II The Southern Sky**, ASP Monograph Series Vol. 5, ed. B. Reipurth, (ASP: San Francisco), 351-380, 2008.
81. *Infrared Spectra of Young Stars Embedded in the R Coronae Australis Cloud Core*, Meyer, M. R. & Wilking, B. A., **Publications of the Astronomical Society of the Pacific**, v121, 350-358, 2009.
82. *The Initial Mass Function and Disk Frequency of the Rho Ophiuchi Cloud: An Extinction-Limited Sample*, Erickson, K. L., Wilking, B. A., Meyer, M. R., Robinson, J. G., & Stephenson, L. N., **Astronomical Journal**, v142, 140-159, 2011.
83. *A Proper Motion Study of Water Masers Associated with the Young Star Haro 6-10: Evidence for a Subarcsecond Binary*, Wilking, B. A., Marvel, K., Gerling, B. M., Claussen, M. J., Wootten, H. A., & Gibb, E. L., submitted to **Astrophysical Journal**, 2011

Teaching Activity:*Courses Taught at UM-St. Louis*

- Cosmic Evolution/Introductory Astronomy (Astronomy 1001, no college algebra prerequisite)
- Planets and Life in the Universe (Astronomy 1011, no college algebra prerequisite)
- Practical Astronomy (Astronomy 1022)
- Introduction to Astronomy I (Astronomy 1050, math prerequisite)
- Introduction to Astronomy II (Astronomy 1051, math prerequisite)
- Windows on Physics (Physics 1099)
- The Search for Extraterrestrial Life (Astronomy 2121)
- Astrophysics (Astronomy 4301)
- Observational Astronomy (Astronomy 4322)
- Graduate Seminar (Physics 6410)
- Independent Study/Research (Undergraduate and Graduate level: Physics 3390, 4381, 6490)

Continuing Education Courses:

- *Halley's Comet* (1985-1986)
- *Starbirth and the Formation of the Solar System*, Saturday Science Seminar for high school teachers (1989)

Public Outreach Programs and NASA/Missouri Space Grant Consortium:

- Schedule Monthly Public Open Houses at Campus Observatory. (1985-present)
- Direct research projects for both high school and undergraduate students during the summer and academic year which are funded by the NASA/Missouri Space Grant Consortium. (1990-present)
- Direct program at campus planetarium for local 5th grade students sponsored by the NASA/Missouri Space Grant Consortium. The program involves about 500 students per year. (1995-present)
- Co-host for state-wide annual meeting of NASA/Missouri Space Grant Consortium, April 1996, April 2001, April 2006, and April 2011.

Selected Master's and Ph.D. Committees:

- James H. Blackwell, Master's thesis, *High Velocity Molecular Gas From Cold IRAS Sources* (1989) (Chair).
- Michael R. Meyer, Master's thesis paper, *Young Stellar Objects in the Vicinity of σ Scorpii* (1991).
- William D. Horst, Ph.D. (Univ. of MO-Columbia), *Multicolor Photometry of Barred Spiral Galaxies* (1992).
- Timothy W. Giblin, Master's degree (1993).
- Lebéé S. G. Meehan, Master's thesis, *A Radio Continuum and Spectral Line Study of Five Young Stellar Objects with Associated H₂O Maser Emission* (1997) (Chair).
- Michael J. Way, Ph.D., *Spectroscopic Studies of Abell Clusters* (1998).
- Zhongyu Zhang, Ph.D., *The Age of Starbursts in the Cluster Abell 3266* (2003).
- Tina M. Fanetti, Master's thesis, *Determining the Spectral Type of Brown Dwarfs Using the Water Index* (2005) (Chair).
- Kari Wojtkowski, Ph.D., *A Characterization of Volatiles Surrounding Low-Mass Young Stellar Objects* (expected 2012).
- Kristen Erickson, Ph. D., *Optical Spectroscopic Studies of Two Star Forming Regions* (expected 2012) (Chair).

Service:*Service within Department:*

Since my hiring in 1984, I have regularly served on Department committees. From 1995--2000 and 2011-present, I served as Graduate Coordinator and was responsible for admitting students to our M.S. and cooperative Ph.D. programs, organizing the annual Alumni Awards Luncheon and Lecture, and editing the Alumni Newsletter. I served as Department Chair from August 2000 until August 2010 and Associate Chairperson from 2010-present. I organized the Department's Five-Year Reviews in 2003 and 2008.

College of Arts & Sciences Committees:

- Academic Advising Committee (1997-1998), Chair (1997).
- Dean's Advisory Committee on Tenure and Promotion Committee (2005, 2011)
- Visioning the Science Complex (2006-2009)
- Dean's Committee on Academic Dishonesty (2007)
- Arts & Sciences Research Awards Review Committee (2010)
- Scholarship Committee (2010)
- Committee on Committees (2011)

Campus Committees:

- Library Committee (1985-1987)
- Academic Computer User's Committee (1987-1990)
- Faculty Council's Ad Hoc Computer Policy Committee (1989)
- Doctoral Faculty Selection Committee (1990)
- Department Representative to the Faculty Council (1991-1993)
- Senate Committee on Computing (1992-1994)
- Chancellor's Committee for Review (1992-1994)
- Member of University Senate (1994-2000, 2005-2008)
- Senate Executive Committee (1994-1997)
- Senate Committee for Student Affairs (1994-1998), Chair (1994-1997)
- Chancellor's Search Committee for the Vice Chancellor for Student Affairs (1997)
- Member of Graduate Council (1998-2000), Chair of the Rules & Regulations Subcommittee (1998-1999).
- Member of the Senate Committee on Appointments, Tenure, and Promotion (1998-2000), Co-Chair (1999-2000).
- Executive Board Member, NASA/Missouri Space Grant Consortium (2003-present)
- Member of Admissions Council (2003-2009)
- Member of Research Advisory Council (2003-2005)
- Member of University Assembly Committee on Recruitment, Admissions, and Retention (2005-2007)
- Member of Search Committee, Director, Center for Molecular Electronics (2004-2006)
- Member, UM-St. Louis Chapter of Sigma Xi (Vice President: 2005-2007, President: 2007-present)
- Member, Conflict of Interest Committee, Office of Research (2006-2011)
- Member of Five-Year Review Committee: Center for Teaching and Learning (2006)
- Chancellor's Task Force on Gender Issues (2007-2009)

Community Service:

In addition to organizing monthly open houses at the Richard D. Schwartz Observatory, I host numerous groups in the campus planetarium including campus groups such as *Discover UMSL*, student

participating in STARS and JSEHS, and community groups such as the Gifted Resource Council, Boy Scout/Cub Scout troops, high school groups, and groups from local universities.

Professional Service:

- Regularly review proposals for the National Science Foundation and NASA and manuscripts for the Astrophysical Journal, Astrophysical Journal Letters, Astronomical Journal, Astronomy and Astrophysics: A European Journal, Monthly Notices of the Royal Astronomical Society, and Protostars and Planets.
- User's Committee for Infrared Processing and Analysis Center, Pasadena, CA (1987-1992).
- Local organizing committee for 172nd meeting of the American Astronomical Society, June 1988.
- Committee on Operations and Plans, NEROC Haystack Observatory, Westford, MA, (1991-1993).
- Telescope Allocation Committee, Infrared Telescope Facility (IRTF), Mauna Kea, Hawaii (1995-1997)
- NSF Review Panelist for CAREER proposals in astronomy (January 1997).
- Panelist in Young Stellar Object group, Support Capabilities for Large Telescopes Workshop, NOAO, Tucson, AZ (September 1997).
- Proposal reviewer for the National Radio Astronomy Observatory 12 meter Telescope (1999-2000).
- Proposal reviewer for Hubble Space Telescope Cycle 13 (March 2004).
- Session Chair, American Astronomical Meeting 205 (January 2005).
- Proposal Reviewer for SOFIA Basic Science (October 2010).