VITA

Phillip J. Smith

Date of Birth: October 2, 1938	Married - three children
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A. GENERAL INFORMATION

1. Education

Ball State University	1956-1960	B.S.	Mathematics
University of Wisconsin	1960-1961	AFIT	Basic Program
University of Wisconsin	1963-1964	M.S.	Meteorology
University of Wisconsin	1964-1967	Ph.D.	Meteorology

2. Professional experience

1961-1963	Aviation Weather Forecaster, U.S. Air Force
1963-1967	Research Assistant, Department of Meteorology, University of Wisconsin
1964-1965	Teaching Assistant, Synoptic Meteorology, University of Wisconsin
1967-1970	Assistant Professor, Department of Geosciences, Purdue University
1970-1981	Associate Professor, Department of Geosciences, Purdue University
1972-1973	Senior Postdoctoral Fellow, National Center for Atmospheric Research
1988-1995	Associate Head, Department of Earth and Atmospheric Sciences, Purdue University
1981-	Professor, Department of Earth and Atmospheric Sciences, Purdue University

3. Awards and honors

Fellow, American Meteorological Society, 1988 Fellow, Royal Meteorological Society (FRMetS) 2004 Outstanding Teacher, 1998-99, Dept. of Earth and Atmospheric Sciences Top Ten Outstanding Teacher, 2003-04, School of Science Teaching Excellence Award, 2006, American Meteorological Society

4. Memberships in academic, professional, and scholarly societies

American Meteorological Society (Fellow) Secretary-Treasurer, Indiana Chapter 1970-71 Vice-Chairman, Indiana Chapter 1971-72, 1976-77 Chairman, Indiana Chapter 1977-1978 Royal Meteorological Society (Fellow; FRMetS) American Geophysical Union Sigma Xi Indiana Academy of Science

5. National recognition

Editor, *Monthly Weather Review* (1997-2004)
Subcommittee on AMS Fellowships and Scholarships (Chair, 2001-2002)
AMS Board on Meteorological and Oceanographic Education in Universities (Member 1993-99, Chair 1995-98)
AMS ad hoc *Career Guide* Planning Committee (1997-99)
AMS Committee of Judges for Undergraduate Awards (Member 1989-92, Chair 1991-92)
AMS Board on Continuing Education, (Ex-officio member 1996-98)
AMS Committee on Weather Forecasting and Analysis (1973-76)
Program Chair, Atmospheric Science Heads and Chairs Meeting (1996)
Review Team for School of Natural Resources, University of Missouri (2001)
Advisory Panel, Midwestern Climate Center (1991-95)
UCAR University Relations Committee
UCAR Committee on NCAR Budget and Programs

B. TEACHING

1. Program development

Dr. Smith was responsible for establishing undergraduate degree programs in meteorology and coordinating between Geosciences and the Department of Agronomy and the Division of Interdisciplinary Engineering in establishing undergraduate programs in agricultural meteorology and industrial meteorology. Further, he shared with Dr. E.M. Agee the task of developing a graduate program in atmospheric science.

2. Courses taught since 1967

Dr. Smith has taught eight different courses in addition to supervising atmospheric science seminars. Seven of these courses were originally developed by him.

*ATMS 230	Survey of Meteorology
ATMS 235	Science of the Atmosphere
*ATMS 431/441	Atmospheric Thermodynamics/Synoptic Meteorology I
*ATMS 432/442	Atmospheric Dynamics I/Synoptic Meteorology II
*ATMS 433/443	Atmospheric Dynamics II/Synoptic Meteorology III
*ATMS 444	Weather Analysis and Forecasting
*ATMS 539	Air Pollution Meteorology
*ATMS 633	Synoptic Scale Dynamics

*Courses developed and taught by Dr. Smith the first time offered.

3. Educational Workshop/Short Course participation

Participant and discussion leader, Workshop on Synoptic Meteorology Instruction, National Center for Atmospheric Research, Boulder, CO, 25-29 July, 1988.

Participant, Mesoscale Short Course for University Faculty, UCAR-COMET, Boulder, CO, 31 May - 10 June, 1994.

Participant, Workshop on Teaching Mesoscale Meteorology, UCAR-UNIDATA, Boulder, CO, 13-17 June, 1994.

Participant, Short Course on New Generation GOES Training, Atlanta, GA, 28 January, 1996.

Participant, Introduction to Commercial Meteorology Short Course, WeatherData, Inc., Wichita, KS, 20-23 May, 1998.

Participant, Numerical Weather Prediction Short Course for University Faculty, UCAR-COMET, Boulder, CO, 7-11 June, 1999.

- 4. Co-author of the Atmospheric Pressure and Wind section of "Climate and Weather", vol. 16, *Encyclopedia Britannica*, 15th edition, 1988, pp. 452-468.
- 5. Dr. Smith has a strong interest in quality undergraduate counseling and has always assumed a substantial counseling role. His efforts led to the establishment of faculty-wide counseling in the department in 1971. He typically advises 10-15 undergraduate students and was supervisor of the Earth and Atmospheric Sciences counseling office from 1988-1995.

ATMS 235S1998324.5/5.0ATMS 444S199884.9/5.0ATMS 230F19981754.2/5.0ATMS 235S1999424.7/5.0ATMS 444S1999205.0/5.0ATMS 235S2000524.1/5.0ATMS 444S2000114.7/5.0ATMS 431F2000264.1/5.0ATMS 433F2000134.8/5.0ATMS 235S2001404.8/5.0ATMS 433F2000164.9/5.0EAS 633F200164.9/5.0EAS 633F200164.9/5.0EAS 434S2002214.9/5.0EAS 423F20021654.0/5.0EAS 423F2003154.9/5.0EAS 423F2003124.8/5.0EAS 423F2003124.8/5.0EAS 423F2004104.9/5.0EAS 423F2004294.6/5.0EAS 423F2004274.6/5.0EAS 423F2004274.6/5.0EAS 423F200475.0/5.0EAS 423F200475.0/5.0EAS 423F2005135.0/5.0EAS 423F2006274.8/5.0EAS 423F2006274.8/5.0EAS 423F2006124.8/5.0	Course	Year	Enrollment	Instructor Evaluation
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6. Teaching evaluations (last 10 years)

7. Direction of Graduate and Undergraduate Theses

<u>Ph.D.</u>

Sharad Adhikary, 1974: A Model of Horizontal Eddy-Dissipation and Its Application During the Life Cycle of an Intense Cyclone. Director General, Department of Hydrology and Meteorology, Nepal.

Harrison Chien, 1975: Kinetic and Potential Energy Budget Analyses of Hurricane Camille (1969) During Transit Across the Southeastern United States. Chairman of Board, Broadcasting Corporation of China, Taiwan.

John Ward, 1978: Diagnostic Analyses of Initialized and Short Range Forecast Fields Derived from the NCAR General Circulation Model. Research scientist at National Meteorological Center.

Yi-Tsuei Sheu, 1979: The Kinetic Energy Climatology of Tropospheric and Lower Stratospheric Flow Regimes Associated with Intermediate and Short 500 mb Waves. Computer analyst with Sciences Applications Corporation, Greenbelt, MD.

Song Chin Lin, 1980: The Available Potential Energy Budget of a Severe Storm -Producing Extratropical Cyclone. Professor, Department of Atmospheric Physics, National Central University, Taiwan.

Franklin Robertson, 1981: A Study of the Impact of Diabatic Heating on the Evolution of Extratropical Cyclones. Research Scientist, NASA/Marshall Space Flight Center.

Patricia Pauley, 1985: The Direct and Indirect Effects of Latent Heat Release on Extratropical Cyclone Development. Research Scientist, Naval Research Laboratory, Monterey, CA.

John Keller, 1987: An Investigation of Clear Air Turbulence as a Response to Larger-Scale Dynamic Processes. Staff Scientist, Lincoln Laboratories, Boston MA.

Chih-Hua Tsou, 1988: The Role of an Upstream Cyclone and Corresponding Synoptic/Planetary-Scale Interactions During the Development of a Blocking Anticyclone. Professor, National Taiwan Normal University.

Anthony Lupo, 1995: The Interactions Between Mid-Latitude Blocking Anticyclones and Synoptic-Scale Cyclones in the Northern Hemisphere. Assistant Professor, Dept. of Atmospheric Science, University of Missouri, Columbia.

Kenneth Parsons, 2001: The Role of Sybsynoptic Processes in Synoptic-Scale Extratropical Cyclone Development. Assistant Professor, Embry-Riddle Aeronautical University.

<u>M.S.</u>

Harrison Chien, 1971: The Estimation of Kinematic Parameters in the Atmosphere from Radiosonde Wind Data. Continued for Ph.D.

Henry Drahos, 1972: Application of Vertical Motion and Relative Humidity Prognoses to Cloud and Precipitation Forecasting. Scientist at National Environmental Satellite Service, Washington, DC.

Robert Green, 1972: Determination of Low Level Temperature Profiles and Stability Parameters from Synoptic Scale Meteorological Data. Staff Member, UNIDATA Program Office, UCAR, Boulder, CO.

John Ward, 1975: A Kinetic Energy Budget Over North America During a Period of Short Wave Development. Continued for Ph.D.

Thomas Bettge, 1975: A Comparison of Kinetic Energy Analyses From the NCAR General Circulation Model and Observational Data. Support scientist at NCAR, Boulder, CO.

Yi-Tsuei Sheu, 1976: Kinematic and Energetic Analyses During the Air Mass Transformation Experiment 1975. Continued for Ph.D.

Chao-Ping Lin, 1977: A Comparison of Synoptic Scale Vertical Motions Computed by the Kinematic Method and Two Forms of the Omega Equation. Continued for Ph.D. in Fluid Mechanics.

Franklin R. Robertson, 1978: The Kinematics and Energetics of Two Severe Storm Producing Extratropical Cyclones. Continued for Ph.D.

Kennan M. Zishka, 1979: Climatology of Cyclones and Anticyclones Over the North American Continent and Surrounding Ocean Environs for January and July, 1950-1977. Air pollution meteorologist at Burns and McDonnell Engineering Co., Kansas City, MO.

Stephen F. Kenney, 1982: Energy Conversion Processes of the 9-11 January 1975 Cyclone. Aviation Weather Forecaster for Global Weather Dynamics, Monterey, CA.

Patricia M. Dare, 1982: A Comparison of Observed and Model Energy Balance for an Extratropical Cyclone System. Continued for Ph.D.

Shiang-Jiun Lin, 1983: Utilization of Satellite Cloud Information to Improve the Estimation of Latent Heat Release. Continued for Ph.D. in Computer Science.

Chih-Hua Tsou, 1985: A Comparison of Adiabatic and Diabatic Forcing in an Intense Extratropical Cyclone System. Continued for Ph.D.

William F. Sjoberg, 1986: Modification of Parameterized Latent Heat Release Estimates Using Unenhanced and Enhanced Satellite Imagery. Weather Officer, United States Air Force.

John E. Zimmerman, 1987: The Role of Latent Heat Release in the Evolution of a Weak Extratropical Cyclone. Meteorologist, National Weather Service, Indianapolis, IN.

Earl K. Fosdick, 1989: The Role of Latent Heat Release in the Explosive Development of Two Extratropical Cyclones. Meteorologist, Radian Corporation, Sacramento, CA.

Mary A. Uhl, 1989: Synoptic-Scale Forcing of Two Explosively Developing Cyclones. Meteorologist, Air Quality Bureau, Environment Department, State of New Mexico.

Anthony R. Lupo, 1991: A Diagnosis of the Explosive Development of Two Extratropical Cyclones. Continued for Ph.D.

Gregory L. Lamberty, 1991: A Study of the Influence of Satellite Data on Goddard Laboratory for Atmospheres' Analyses. Meteorologist, National Weather Service, North Webster, IN.

Melinda L. Hunter, 1993: A Diagnosis of the Development of a Winter Anticyclone Over North America. Meteorologist, Texas Air Pollution Control Board.

Robert L.M. Rausch, 1994: A Diagnosis of a Model-Simulated Explosively Developing Extratropical Cyclone. Meteorologist, National Meteorological Center.

Donald M. Rolfson, 1994: A Diagnosis of Extratropical Cyclone Developments Over the United States. Meteorologist, National Weather Service, Rochester, MN.

James M. Vasilj, 1995: A Comparison of Generalized and Quasigeostrophic Forcing During Two Extratropical Cyclone Developments. Meteorologist, American Airlines, Dallas, TX.

Karen D. Walthorn, 1996: A Diagnostic Study of the Dynamics of Two General Circulation Model-Simulated Extratropical Cyclones. Environmental Scientist, Michigan consulting firm.

Douglas E. Murphy, 1998: Kinematic Properties of a Mid-Latitude Mobile Trough. Computer programmer, PRC, Inc., McLean, VA. Jennifer L.S. Strahl, 2000: A Diagnostic Study of an Explosively Developing Extratropical Cyclone and the Associated Upper Wave. Meteorologict, Science Applications International Corporation (SAIC), Monterey, CA.

William E. Morris, Jr., 2000: Cyclolysis: A Case Study of Two Extratropical Cyclones. Staff Meteorologist, ACES Power Marketing, Indianapolis, IN.

Corey N. Pieper, 2002: A Comparison of Extended and Quasigeostrophic Dynamics During an Explosive Cyclone Development. Staff Meteorologist, University of Kentucky, Lexington, KY.

Christopher J. Melick, 2003: A Comparison of Vertical Motions obtained from Different Forms of the Omega Equation. Continued for Ph.D. at University of Missouri.

Kevin C. Viner, 2004: The Contribution of Merging Upper-Level Troughs and their Background Flow to an Explosive Extratropical Cyclone Development. Continued for Ph.D. at Texas A&M University.

B.S. Honors

Paul Ciesielski, 1977: The Influence of a Synoptic Scale Cyclone on Boundary Layer Winds Over Lake Michigan.

National Award: This thesis was awarded first prize in competition with other submitted papers for the Father James B. Macelwane Award given by the AMS. Received M.S. at Colorado State University.

Frederick Brennan, 1977: The Climatology of Cyclones and Anticyclones in the Upper Mississippi and Ohio River Valleys and Great Lakes Region, 1950-74. National Award: This thesis was awarded second prize in the Macelwane competition.

Received M.S. at Purdue University.

Ellen M. Salmon, 1979: A Synoptic Analysis of the 25-26 January 1978 Blizzard in the Central United States.

National Award: Recipient of the Howard T. Orville Scholarship based on academic excellence given by AMS.

Received M.S. at Pennsylvania State University

Patricia M. Dare, 1980: A Study of the Severity of the Midwestern Winters of 1977 and 1978 Using Heating Degree Days Determined from Both Measured and Wind Chill Temperatures.

National Awards: Recipient of the Howard T. Orville Scholarship based on academic excellence. Thesis awarded first prize in the Macelwane competition. Received M.S. and Ph.D. at Purdue University.

Randy A. Peppler, 1980: An Analysis of Truncation Errors in Finite Difference Estimates of Geostrophic Wind and Relative Vorticity. Received M.S. at Purdue University.

Michael N. Baker, 1989: Low Level Static Stability Variations During the Evolution of Two Winter Extratropical Cyclones. Received M.S. at Florida State University. Ph.D. student at Georgia Tech.

Richard D. Knabb, 1990: The Role of Vorticity in an Explosively Deepening Extratropical Cyclone.

National Award: This thesis was awarded first prize in the Macelwane competition.

Received M.S. and Ph.D. at Florida State University.

Melinda L. Hunter, 1991: A Study of an Intense Upper Air Cyclone Development.

Received M.S. at Purdue University.

Donald M. Rolfson, 1992: The Relationships Between Extratropical Cyclone Intensity and Precipitation Coverage and Intensity. National Award: Recipient of the Howard H. Hanks Scholarship based on academic excellence given by the AMS. Received M.S. at Purdue University.

David R. Stettner, 1992: Characteristics of Temperature and Vorticity Advection During Extratropical Cyclone Development. National Award: Thesis awarded third prize in the Macelwane competition. Received M.S. at Purdue University.

Douglas E. Murphy, 1996: An Index for the Short-Range Prediction of Surface Extratropical Cyclone Development. Received M.S. at Purdue University.

Douglas K. Martins, 2002: The Climatology of Extratropical Cyclones over the United States During El Niño and La Niña. Attending Graduate School at Purdue University.

Joseph M. Nield, 2004: A Comparison of Early Winter Circulations for 2000 and 2001.

Weather forecaster for National Weather Service.

Douglas Brent McRoberts, 2004: The Relationship Between Upper Tropospheric Turbulence and Synoptic Meteorological Data. Attending graduate school at Texas A&M.

C. RESEARCH

1. Reviewed publications

Smith, P.J. (1969): On the Contribution of a Limited Region to the Global Energy Budget. *Tellus*, **21**, 202-207.

Smith, P.J. and L.H. Horn (1969): A Computational Study of the Energetics of a Limited Region of the Atmosphere. *Tellus*, **21**, 193-201.

Smith, P.J. (1970): A Note on Energy Conversions in Open Atmospheric Systems. *Journal of the Atmospheric Sciences*, **27**, 518-521.

Smith, P.J. (1971): An Analysis of Kinematic Vertical Motion. *Monthly Weather Review*, **99**, 715-724.

Chien, H., and P.J. Smith (1973): On the Estimation of Kinematic Parameters in the Atmosphere from Radiosonde Wind Data. *Monthly Weather Review*, **101**, 252-261.

Smith, P.J. (1973): The Kinetic Energy Budget Over North America During a Period of Major Cyclone Development. *Tellus*, **25**, 411-423.

Smith, P.J. (1973): Mid-Latitude Synoptic Scale Systems: Their Kinetic Energy Budgets and Role in the General Circulation. *Monthly Weather Review*, **101**, 757-762.

Smith, P.J. (1973): The Net Generation of Large Scale Available Potential Energy by Sub-Grid Scale Processes. *Journal of the Atmospheric Sciences*, **30**, 1714-1717.

Smith, P.J., and S. Adhikary (1974): The Dissipation of Kinetic Energy in Large-Scale Atmospheric Circulations. *Reviews of Geophysics and Space Physics*, **12**, 281-284.

Kung, E.C., and P.J. Smith (1974): Problems of Large-Scale Kinetic Energy Balance - A Diagnostic Analysis in GARP. *Bulletin of the American Meteorological Society*, **55**, 768-777.

Ward, J.H., and P.J. Smith (1976): A Kinetic Energy Budget Over North America During a Period of Short Synoptic Wave Development. *Monthly Weather Review*, **104**, 836-848.

Bettge, T.W., P.J. Smith, and D.P. Baumhefner (1976): A Comparison of Kinetic Energy Budget Analyses Derived from NCAR GCM and Observed Data. *Monthly Weather Review*, **104**, 1242-1254.

Chien, H.H., and P.J. Smith (1977): Synoptic and Kinetic Energy Analyses of Hurricane Camille (1969) During Transit Across the Southeastern United States. *Monthly Weather Review*, **105**, 67-77.

Sheu, Y.-T., and P.J. Smith (1977): Kinematic Analyses Over Eastern Asia During a Subperiod of the Air Mass Transformation Experiment 1975. *Tellus*, **29**, 393-401.

Smith, P.J., D.G. Vincent, and H.J. Edmon, Jr. (1977): The Time Dependence of Reference Pressure in Limited Region Available Potential Energy Budget Equations. *Tellus*, **29**, 476-480.

Sheu, Y.-T., and P.J. Smith (1977): Kinetic Energy Budget Analyses During a Subperiod of the Air Mass Transformation Experiment 1975. *Monthly Weather Review*, **105**, 1501-1507.

Brennan, F.E., and P.J. Smith (1978): The Climatology of Cyclones and Anticyclones in the Upper Mississippi and Ohio Valleys and Great Lakes Region. *Proceedings of the Indiana Academy of Science*, **87**, 391-402.

Smith, P.J., and C.P. Lin (1978): A Comparison of Synoptic Scale Vertical Motions Computed by the Kinematic Method and Two Forms of the Omega Equation. *Monthly Weather Review*, **106**, 1687-1694.

Lin, S.C., and P.J. Smith (1979): Diabatic Heating and Generation of Available Potential Energy in a Tornado Producing Extratropical Cyclone. *Monthly Weather Review*, **107**, 1169-1183.

Dare, P.M., and P.J. Smith (1979): A Study of the Severity of Indiana's 1977 and 1978 Winters Using Heating Degree Days Determined From Both Measured and Wind Chill Temperatures. *Proceedings of the Indiana Academy of Science*, **88**, 411-422.

Smith, P.J. (1980): The Energetics of Extratropical Cyclones. *Review of Geophysics and Space Physics*, **18**, 378-386.

Robertson, F.R., and P.J. Smith (1980): The Kinetic Energy Budgets of Two Severe Storm Producing Extratropical Cyclones. *Monthly Weather Review*, **108**, 127-143.

Salmon, E.M., and P.J. Smith (1980): A Synoptic Analysis of the 25-26 January 1978 Blizzard Cyclone in the Central United States. *Bulletin of the American Meteorological Society*, **61**, 453-460.

Zishka, K.M., and P.J. Smith (1980): The Climatology of Cyclones and Anticyclones Over North America and Surrounding Ocean Environs for January and July, 1950-77. *Monthly Weather Review*, **108**, 387-401. Ward, J.H., P.J. Smith, and D.P. Baumhefner (1980): The Sensitivity of Short Range Forecast Skill of the NCAR Second Generation General Circulation Model to Data Analysis and Initialization. *Monthly Weather Review*, **108**, 1522-1532.

Sheu, Y.-T., and P.J. Smith (1981): A Kinetic Energy Climatology of Flow Regimes Associated with 500 mb Waves Over North America in Winter and Spring. *Monthly Weather Review*, **109**, 1862-1878.

Lin, S.C., and P.J. Smith (1982): The Available Potential Energy Budget of a Severe-Storm Producing Extratropical Cyclone. *Monthly Weather Review*, **110**, 521-533.

Robertson, F.R., and P.J. Smith (1983): The Impact of Model Moist Processes on the Energetics of Extratropical Cyclones. *Monthly Weather Review*, **111**, 723-744.

Kenney, S.E., and P.J. Smith (1983): On the Release of Eddy Available Potential Energy in an Extratropical Cyclone System. *Monthly Weather Review*, **111**, 745-755.

Peppler, R.A., and P.J. Smith (1984): Truncation Errors in Finite Difference Estimates of Geostrophic Wind and Relative Vorticity. *Monthly Weather Review*, **112**, 575-583.

Dare, P.M., and P.J. Smith (1984): A Comparison of Observed and Model Energy Balance for an Extratropical Cyclone System. *Monthly Weather Review*, **112**, 1289-1308.

Smith, P.J., P.M. Dare, and S.-J. Lin (1984): The Impact of Latent Heat Release on Synoptic-Scale Vertical Motions and the Development of an Extratropical Cyclone System. *Monthly Weather Review*, **112**, 2421-2430.

Lin, S.-J., and P.J. Smith (1985): Utilization of Satellite-Derived Cloud Cover to Improve the Estimation of Latent Heat Release in a Winter Extratropical Cyclone. *Monthly Weather Review*, **113**, 1942-1950.

Smith, P.J., and P.M. Dare (1986): The Kinetic and Available Potential Energy Budget of a Winter Extratropical Cyclone System. *Tellus*, **38A**, 49-59.

Tsou, C.-H., P.J. Smith, and P.M. Pauley (1987): A Comparison of Adiabatic and Diabatic Forcing in an Intense Extratropical Cyclone System. *Monthly Weather Review*, **115**, 763-786.

Smith, P.J., and C.-H. Tsou (1988): Static Stability Variations During the Development of an Intense Extratropical Cyclone. *Monthly Weather Review*, **116**, 1245-1250.

Pauley, P.M., and P.J. Smith (1988): The Direct and Indirect Effects of Latent Heat Release on a Synoptic-Scale System. *Monthly Weather Review*, **116**, 1209-1235.

Zimmerman, J.E., P.J. Smith, and D.R. Smith (1989): The Role of Latent Heat Release in the Evolution of a Weak Extratropical Cyclone. *Monthly Weather Review*, **117**, 1039-1057.

Tsou, C.-H., and P.J. Smith (1990): The Role of Synoptic/Planetary-Scale Interactions During the Development of a Blocking Anticyclone. *Tellus*, **42A**, 175-193.

Tsou, C.-H., and P.J. Smith (1990): The Importance of Non-Quasigeostropic Forcing During the Development of a Blocking Anticylcone. *Tellus*, **42A**, 328-342.

Fosdick, E.K., and P.J. Smith (1991): Latent Heat Release in an Extratropical Cyclone that Developed Explosively Over the Southeastern United States. *Monthly Weather Review*, **119**, 193-207.

Smith, P.J., and C.-H. Tsou (1992): Energy Transformations Associated With the Synoptic and Planetary Scales During the Evolution of a Blocking Anticyclone and an Upstream Explosively-Developing Cyclone. *Tellus*, **44A**, 252-260.

Uhl, M.A., P.J. Smith, A.R. Lupo, and P. Zwack (1992): The Diagnosis of a Pre-Blocking Explosively-Developing Extratropical Cyclone System. *Tellus*, **44A**, 236-251.

Lupo, A.R., P.J. Smith, and P. Zwack (1992): A Diagnosis of the Explosive Development of Two Extratropical Cyclones. *Monthly Weather Review*, **120**, 1490-1523.

Lamberty, G.L., and P.J. Smith (1993): A Study of the Influence of Satellite Data on GLA Analyses Over the Atlantic Ocean During Period of Blocking Anticyclone Development. *Monthly Weather Review*, **121**, 1881-1891.

Lupo, A.R., and P.J. Smith (1995): Climatological Features of Blocking Anticyclones in the Northern Hemisphere. *Tellus*, **47A**, 439-456.

King, M.L., P.J. Smith, and A.R. Lupo (1995): A Diagnosis of the Development of a Winter Anticyclone Over North America. *Monthly Weather Review*, **123**, 2273-2284.

Lupo, A.R., and P.J. Smith (1995): Planetary and Synoptic-scale Interactions During the Life Cycle of a Mid-latitude Blocking Anticyclone Over the North Atlantic. *Tellus*, **47A**, 575-596.

Rausch, R.L.M., and P.J. Smith (1996): A Diagnosis of a Model-Simulated Explosively Developing Extratropical Cyclone. *Monthly Weather Review*, **124**, 875-904.

Rolfson, D.M., and P.J. Smith (1996): A Composite Diagnosis of Synoptic-Scale Extratropical Cyclone Development Over the United States. *Monthly Weather Review*, **124**, 1084-1099. Vasilj, J.M., and P.J. Smith (1997): A Comparison of Extended and Quasigeostrophic Dynamics for a Case of Small Rossby Number Extratropical Cyclone Development. *Monthly Weather Review*, **125**, 3347-3356.

Lupo, A.R., and P.J. Smith (1998): The Interactions Between a Mid-Latitude Blocking Anticyclone and a Synoptic-Scale Cyclone That Occurred During the Summer Season. *Monthly Weather Review*, **126**, 502-515.

Walthorn, K.D., and P.J. Smith (1998): The Dynamics of an Explosively-Developing Cyclone Simulated by a General Circulation Model. *Monthly Weather Review*, **126**, 2764-2781.

Smith, P.J. (2000): The Importance of the Horizontal Distribution of Heating during Extratropical Cyclone Development. *Monthly Weather Review*, **128**, 3692-3694.

Strahl, J.L.S., and P.J. Smith (2001): A Diagnostic Study of an Explosively Developing Extratropical Cyclone and an Associated 500 hPa Trough Merger. *Monthly Weather Review*, **129**, 2310-2328.

Morris, W.E., and P.J. Smith (2001): Cyclolysis: A Diagnosis of Two Extratropical Cyclones. *Monthly Weather Review*, **129**, 2714-2729.

Parsons, K.E., and P.J. Smith (2004): An Investigation of Extratropical Cyclone Development using a Scale-separation Technique. *Monthly Weather Review*, **132**, 956-974.

2. Unreviewed publications

Smith, P.J., L.H. Horn, and D.R. Johnson (1965): A Harmonic Analysis of TIROS IV Infrared Radiation Measurements (M.S. Thesis). *Studies of Large Scale Atmospheric Energetics*, Annual Report, Department of Meteorology, University of Wisconsin.

Smith, P.J., L.H. Horn, and D.R. Johnson (1968): Energy Equations and Their Application to a Limited Region of the Atmosphere (Ph.D. Thesis). *Studies of Large Scale Atmospheric Energetics*, Annual Report, Department of Meteorology, University of Wisconsin.

Westlin, P.R., D.L. Brenchley, and P.J. Smith (1972): An Empirical Study of the Length of Cooling Tower Plumes. Preprint of paper presented at the 65th Annual Meeting of the Air Pollution Control Association.

Smith, P.J. (1974): Adjustments to the Divergent Component of the Wind and Their Influence on Synoptic Scale Energy Budget Calculations. Preprints of Fifth Conference on Weather Forecasting and Analysis, March 4-7, 1974, St. Louis, Mo.

Ward, J.H., P.J. Smith, and D.P. Baumhefner (1977): A Comparison of Observed and Predicted Kinetic Energy Fields Over North America. Conference Papers. Third Conference on Numerical Weather Prediction. April 26-28, 1977, Omaha, Nebraska.

Ward, J.H., P.J. Smith, and D.P. Baumhefner (1979): The Sensitivity of Data Analysis and Initialization in the Short Range Forecast Skill of the NCAR Second Generation General Circulation Model. Preprints of Fourth Conference on Numerical Weather Prediction. October 29 - November 1, 1979, Silver Spring, MD.

Smith, P.J., and S.C. Lin (1980): The Generation and Release of Available Potential Energy in an Extratropical Cyclone. Preprints of Eighth Conference on Weather Forecasting and Analysis, June 10-13, 1980, Denver, CO.

Robertson, F.R., and P.J. Smith (1981): The Impact of Moist Model Processes on Baroclinic Wave Energetics. Preprints of Fifth Conference on Numerical Weather Prediction. November 2-6, 1981, Monterey, CA.

Dare, P.M., and P.J. Smith (1983): A Comparison of Observed and Numerically Predicted Eddy Kinetic Budgets for a Developing Extratropical Cyclone. Preprints of the Sixth Conference on Numerical Weather Prediction, June 6-9, 1983, Omaha, Nebraska.

Smith, P.J., and C.-H. Tsou (1985): Adiabatic and Diabatic Forcing of the Development of a Winter Extratropical Cyclone. Preprints of the Seventh Conference on Numerical Weather Prediction, June 17-20, 1985, Montreal, Canada.

Dare, P.M., P.J. Smith, and J.T. Shively (1985): The Role of Convective and Stable Latent Heat Release in the Development of an Extratropical Cyclone. Preprints of the Seventh Conference on Numerical Weather Prediction, June 17-20, 1985, Montreal, Canada.

Smith, P.J. (1988): Role of Latent Heat Release in Extratropical Cyclone Development. Proceedings of Workshop on Diabatic Forcing, November 30 - December 2, 1987, European Centre for Medium Range Weather Forecasts, Reading, U.K.

Tsou, C.-H., and P.J. Smith (1988): The Role of Synoptic/Planetary-Scale Interactions During the Development of a Blocking Anticyclone. Preprints of the Palmen Memorial Symposium on Extratropical Cyclones, August 29 - September 2, 1988, Helsinki, Finland.

Smith, P.J., C.-H. Tsou, and M.N. Baker (1988): Static Stability Variations During a Winter Marine Cyclone Development. Preprints of the Palmen Memorial Symposium on Extratropical Cyclones, August 29 - September 2, 1988, Helsinki, Finland.

Fosdick, E.K., and P.J. Smith (1989): Latent Heating Associated With a Rapidly Developing Cyclone Over the North Atlantic Ocean. Preprints of the 12th Conference on Weather Analysis and Forecasting, October 2-6, 1989, Monterey, CA.

Smith, P.J., and R.D. Knabb (1991): A Diagnosis of Vorticity Fields Associated With an Explosively-Developing Winter Cyclone Over the Southeastern United States. Preprints of First International Winter Storm Symposium, January 14-18, 1991, New Orleans, LA.

Zwack, P., J. Mailhot, and P. Smith (1991): Diagnosing Development, Part I: PE Regional Model Simulation of Rapid Cyclone Development. Preprints of First International Winter Storm Symposium, January 14-18, 1991, New Orleans, LA.

Smith, P., A Lupo, and P. Zwack (1991): Diagnosing Development, Part II: A Study of Rapid Cyclone Development Using Analyzed Data Fields. Preprints of First International Winter Storm Symposium, January 14-18, 1991, New Orleans, LA.

Hunter, M.L., and P.J. Smith (1992): The Nested Grid Model Prediction of an Intense Upper Air Cyclone Development. Preprints of the Symposium on Weather Forecasting, January 5-10, 1992, Atlanta, GA.

Lupo, A.R., and P.J. Smith (1992): A Comparison of Synoptic-Scale Development Characteristics for Over-Water and Over-Land Cases of Explosive Cyclone Development. Preprints of the Symposium on Weather Forecasting, January 5-10, 1992, Atlanta, GA.

Lupo, A.R., P.J. Smith, and R.J. Oglesby (1993): Climatological Features of Blocking Anticyclones. Proceedings of the 17th Stanstead Seminar, June 13-18, 1993, Lennoxville, Quebec, Canada.

Lupo, A.R., and P.J. Smith (1994): Climatological Features of Blocking Anticyclones I: An Investigation of Observed Mid-Latitude Blocking Characteristics in the Northern Hemisphere. Preprints of the 6th Conference on Climate Variations, January 24-28, 1994, Nashville, TN.

Smith, P.J., S. Businger, E. Pani, and J. Zabransky (1994): A Bachelor's Degree in Atmospheric Science - A Proposal for Revision of the 1987 AMS Statement. Preprints of the 3rd Symposium on Education in the Atmospheric Sciences, January 24-25, 1994, Nashville, TN.

Lupo, A.R., and P.J. Smith (1994): The Interaction Between a Mid-Latitude Blocking Anticyclone and the Precursor Cyclone Over the North Atlantic. Preprints of the Symposium on the Life Cycles of Extratropical Cyclones, Vol. II, Bergen, Norway, June 27 - July 1, 1994.

Smith, P.J., and A.R. Lupo (1994): A Diagnosis of the Life Cycle of a Marine Cyclone System. Preprints of the Symposium on the Life Cycles of Extratropical Cyclones, Vol. II, Bergen, Norway, June 27 - July 1, 1994.

Rausch, R.L.M., and P.J. Smith (1994): Diagnosis of a Model Simulation of an Explosively Developing Extratropical Cyclone. Preprints of the 10th Conference on Numerical Weather Prediction, July 18-22, Portland, Oregon.

Rolfson, D.R., and P.J. Smith (1995): A Diagnosis of Twelve Extratropical Cyclone Developments Over the United States. Preprints of the 14th Conference on Weather Analysis and Forecasting, January 15-20, Dallas, TX.

Smith, P.J., S. Businger, E. Pani, and J. Zabransky (1995): The Bachelor's Degree in Atmospheric Science - Revision of the 1987 AMS Statement. Preprints of the 4th Symposium on Education, January 15-16, Dallas, TX.

Walthorn, K.D., and P.J. Smith (1998): The Dynamics of an Explosively-Developing Cyclone Simulated by a General Circulation Model. Preprints of the 12th Conference on Numerical Weather Prediction, January 11-16, Phoenix, AZ.

Smith, P.J. (1999): The Importance of the Horizontal Distribution of Heating During Extratropical Cyclone Development. Preprints of the 17th Conference on Weather Analysis and Forecasting, September 13-17, Denver CO.

Parsons, K. and P.J. Smith (2002): The Role of Subsynoptic Processes in Synoptic-Scale Extratropical Cyclone Development. Preprints of the 19th Conference on Weather Analysis and Forecasting, August 12-16, San Antonio, TX.

3. Research grants and awards received

Dr. Smith has received research support from federal agencies amounting to a total of \$1,814,805. Funded projects have been:

A Diagnostic Study of Synoptic Scale Atmospheric Processes 1969-1971 NSF \$56,000

The Energetics of Open Atmospheric Systems 1971-1973 NSF \$61,500

The Atmospheric Energy Budget Over North America During Periods of Cyclone Development

1973-1975 NSF \$85,500

Kinetic and Potential Energy Budgets of Middle Latitude Synoptic Scale Systems	
1975-1977 1977-1979 NSF	
\$102,800 \$137,300	
φ102,000 φ157,500	
Energetics Analyses of Regional Numerical Prediction Models	
1979-1981 NSF	
\$104, 300	
Utilization of Satellite Cloud Information to Diagnose the Energy State and	
Transformations in Extratropical Cyclones	
1981-1984 NASA	
\$165,200	
\$105,200	
The Role of Latent Heat Release in Extratropical Cyclone Development	
1983-1985 1986-1988 NSF	
\$150,800 \$139,800	
The Significance of Non-Quasigeostrophic Processes in Synoptic/Planetary-Scale Interactions.	
1984-1988 NASA	
\$246,270	
Synoptic/Planetary-Scale Interactions and Blocking Over the North Atlantic Ocean.	
1989-1992 NASA	
\$315,335	
<i>4010,000</i>	
The Life Cycles of Intense Cyclonic and Anticyclonic Circulation Systems Observed Over Oceans.	
1992-1996 NASA	
\$250,000	
$\psi 2 J 0,000$	
Invited papers and seminars	

4. Invited papers and seminars

Kinetic Energy Budgets of Mid-Latitude Synoptic Scale Systems. Atmospheric Dynamics Seminar Series, National Center for Atmospheric Research, March 1973.

The Role of Atmospheric Energetics in Studies of Extratropical Cyclones. 60th Annual Meeting of the American Geophysical Union, Washington, D.C., May 28 - June 1, 1979.

The Energy Balance of Extratropical Cyclones, Marshall Space Flight Center, May 13, 1980.

A Comparison of Cyclone Energetics Derived From Moist and Dry Runs of the Drexel Regional Prediction Model. June 1, 1981, Dept. of Meteorology, University of Wisconsin, Madison.

A Diagnosis of Blocking Anticyclone Development Over the North Atlantic Ocean in January 1979. Department of Atmospheric Sciences, University of Illinois, October 14, 1987.

Role of Latent Heat Release in Extratropical Cyclone Development. European Centre for Medium Range Weather Forecasts Workshop on Diabatic Forcing, November 30 - December 2, 1987, Reading, U.K.

The Impact of Latent Heat Release on Extratropical Cyclone Development. Department of Meteorology, The Pennsylvania State University, April 7, 1988.

The Influence of Diabatic Heating on Extratropical Cyclone Development. Department of Marine, Earth, and Atmospheric Sciences, North Carolina State University, February 23, 1989.

Diagnoses of Extratropical Cyclone Development. Department of Meteorology, Texas A&M University, March 28, 1989.

Diagnoses of Explosively Developing Extratropical Cyclones. Department of Physics, University of Quebec at Montreal, December 3, 1990.

B.S. Degrees in Meteorology: Definition, Trends, and Problems. AMS Symposium on Education, Atlanta, GA, January 6-7, 1992.

Extratropical Cyclones in Marine Environments. Waterways Experiment Station, U.S. Army Corps of Engineers, Vicksburg, MS, March 31, 1992.

Panelist on "A Changing Curriculum for the 21st Century", Atmospheric Science Heads and Chairs Meeting, Boulder, CO, October 15-16, 1992.

Diagnosis of a Winter Anticyclone Development. Department of Atmospheric Science, University of Illinois, November 11, 1992.

Diagnosing Synoptic-Scale Development - the Zwack-Okossi Equation. National Meteorological Center, March 24, 1994.

The Diagnosis of a Model-Simulated Explosively Developing Extratropical Cyclone. Ecole Nationale de la Meteorologie, Toulouse, France, June 23, 1994.

The Influence of Latent Heat Release on Extratropical Cyclone Development. Workshop on Links Between Variations in Solar Activity, Atmospheric Conductivity, and Clouds.

Institute of Geophysics and Space Physics, Los Alamos National Laboratory, June 20-21, 1996.

A Report on the 1996 Atmospheric Science Heads and Chairs Meeting (with J.T. Snow). 5th Education Symposium, February 3-4, 1997, Long Beach, CA.

The Dynamics of an Explosively-Developing Cyclone Simulated by a General Circulation Model. Department of Earth Sciences, University of Quebec at Montreal, September 19, 1997.

The Zwack-Okossi Equation: A Tool for Diagnosing Synoptic-scale Wave Behavior. Central Weather Bureau, Taipei, Taiwan, June 1, 1999 and Department of Atmospheric Physics, National Central University, Chung-Li, Taiwan, June 2, 1999.

The Importance of Vertical and Horizontal Heating Distribution in Extratropical Cyclone Development. Department of Atmospheric Science, National Taiwan University, Taipei, Taiwan, June 1, 1999.

The Zwack-Okossi Equation: A Tool for Diagnosing Synoptic-Scale Wave Behavior. Department of Geography, Central Michigan University, April 6, 2000, and Department of Soil and Atmospheric Sciences, University of Missouri, Columbia, April 10, 2000.

Extratropical Cyclones: The Midlatitude Weather Makers. Department of Geography, Central Michigan University, April 6, 2000.

5. Contributed papers not included in unreviewed publication list (presenter of multipleauthored papers underlined)

Chien, H., and <u>P.J. Smith</u>: On the Estimation of Kinematic Parameters in the Atmosphere From Radiosonde Wind Data. Fourth Conference on Weather Analysis and Forecasting. Portland, Oregon, May 1-4, 1972.

Smith, P.J.: Purdue/NCAR Joint Project. GCM Users Meeting, National Center for Atmospheric Research, June 1974.

Adhikary, S.P., and <u>P.J. Smith</u>: A Model of Horizontal Eddy-Dissipation of Kinetic Energy and its Application During the Life Cycle of an Intense Cyclone. First AMS Conference on Regional and Mesoscale Modeling, Analysis, and Prediction, Las Vegas, Nevada, May 6-9, 1975.

<u>Ward, J.H.</u>, and P.J. Smith: A Kinetic Energy Budget Over North America During a Period of Short Wave Development. First Annual Meeting, Midwestern Region, American Geophysical Union, Madison, Wisconsin, September 25-27, 1975. Zishka, K.M., and P.J. Smith: The Climatology of Cyclones and Anticyclones Over North America for January and July, 1950-77. 60th Annual Meeting of The American Geophysical Union, Washington, D.C., May 28 - June 1, 1979.

<u>Robertson, F.R.</u>, and P.J. Smith: Kinetic Energy Analysis of the January 1978 Midwest Cyclone. Extratropical Cyclone Project Workshop, Washington, D.C., May 30 - June 1, 1979.

<u>Vincent, D.G.</u>, and P.J. Smith: A Diagnostic Evaluation of Some Long-lived Tropical Cyclones Over the United States. International Conference on Tropical Cyclones, Perth, Australia, November 25-29, 1979.

<u>Robertson, F.R.</u>, and P.J. Smith: Available Potential Energy Budget for the January 1975 Cyclone. Second Workshop of the Extratropical Cyclone Research Group, July 9-11, 1980, Pennsylvania State University.

<u>Robertson, F.R.</u>, and P.J. Smith: The Impact of Latent Heat Release on the Development of a Synoptic Scale Wave. Workshop on Preliminary Results of SESAME 1979, March 24-25, 1981, Marshall Space Flight Center, AL.

Smith, P.J.: The Influence of Latent Heat Release on Extratropical Cyclone Energetics. NASA/MSFC Atmospheric Processes Research Review, Marshall Space Flight Center, AL, September 1-3, 1981.

Smith, P.J.: An Overview of Energetics Research at Purdue University. Third Workshop of the Extratropical Cyclone Project, March 9-11, 1982, Washington, D.C.

Smith, P.J.: Utilization of Satellite Cloud Information to Modify Latent Heat Release Calculations. NASA/MSFC FY82 Atmospheric Processes Research Review, October 19-21, 1982, Marshall Space Flight Center, AL.

<u>Smith, P.J.</u>, and P.M. Dare: The Impact of Latent Heat Release on Vertical Motions in an Extratropical Cyclone System. Fourth Extratropical Cyclone Project Workshop, November 2-4, 1983, Madison, WI.

Smith, P.J.: Potential Energy Balance in the January 1975 Cyclone System. NASA/MSFC FY84 Atmospheric Processes Research Review, April 30, 1984, Marshall Space Flight Center, AL.

Dare, P.M., and <u>P.J. Smith</u>: Moist and Dry LFM Model Predictions of Winter Extratropical Cyclones. Fifth Extratropical Cyclone Project Workshop, April 22-25, 1985, Port Deposit, MD. <u>Smith, P.J.</u>, and C.-H. Tsou: A Diagnosis of Height Tendencies in a Winter Extratropical Cyclone. Fifth Extratropical Cyclone Project Workshop, April 22-25, 1985, Port Deposit, MD.

Smith, P.J.: Further Diagnoses of the Role of Latent Heat Release in Extratropical Cyclone Development. NASA Global Scale Atmospheric Processes Review, July 9-11, 1985, Columbia, MD.

Smith, P.J.: Diagnostic Studies of Extratropical Cyclones. First ERICA (Experiment on Rapidly Intensifying Cyclones in the Atlantic) Workshop, September 15-18, 1986, Philadelphia, PA.

Smith, P.J.: Synoptic Analysis of a Blocking High Development Over the North Atlantic Ocean. Workshop on NASA's Global-Scale Processes Research Program, January 5-7, 1987, Marshall Space Flight Center, AL.

Smith, P.J., and C.-H. Tsou: Static Stability Variations During the Development of an Intense Extratropical Cyclone. Sixth Extratropical Cyclone Workshop, February 16-20, 1987, Monterey, CA.

<u>Smith, D.R.</u>, and P.J. Smith: Sensitivity of a Developing Extratropical Cyclone to Latent Heat Release. Sixth Extratropical Cyclone Workshop, February 16-20, 1987, Monterey, CA.

Zimmerman, J.E., and P.J. Smith: LFM Simulations of a Weak Extratropical Cyclone. Sixth Extratropical Cyclone Workshop, February 16-20, 1987, Monterey, CA.

Smith, P.J.: A Diagnosis of Blocking Over the North Atlantic Ocean. NASA/MSFC FY87 Global Scale Atmospheric Processes Research Program Review, June 17-18, 1987, Marshall Space Flight Center, AL.

Smith, P.J. Synoptic/Planetary-Scale Interactions and Blocking Over the North Atlantic Ocean. NASA/MSFC FY88 Global Scale Atmospheric Processes Research Program Review, August 2-3, 1988, Marshall Space Flight Center, AL.

Smith, P.J.: Static Stability Variations During Continental and Marine Cyclone Developments. Seventh Extratropical Cyclone Workshop, October 18-21, 1988, Philadelphia, PA.

Smith, P.J.: Synoptic/Planetary-Scale Interactions and Blocking Over the North Atlantic Ocean. NASA/MSFC Global Scale Atmospheric Processes Research Program Review, June 27, 1989, Marshall Space Flight Center, AL.

<u>Smith, P.J.</u>, and C.-H. Tsou: The Importance of Non-Quasigeostrophic Forcing During the Development of a Blocking Anticyclone. Fifth Scientific Assembly of IAMAP, July 31 - August 12, Reading, United Kingdom.

<u>Smith, P.J.</u>, and M.A. Uhl: A Diagnosis of a Rapidly Developing Winter Cyclone Over the North Atlantic Ocean. Fifth Scientific Assembly of IAMAP, July 31 - August 12, 1989, Reading, United Kingdom.

Smith, P.J.: Synoptic/Planetary-Scale Interactions and Blocking Over the North Atlantic Ocean. NASA/MSFC Global Scale Atmospheric Processes Research Program Review, August 20-21, 1990, Marshall Space Flight Center, AL.

Smith, P.J.: Synoptic/Planetary-Scale Interactions and Blocking Over the North Atlantic Ocean. NASA/MSFC Global Scale Atmospheric Processes Research Program Review, May 28-30, 1991.

Smith, P.J.: Synoptic/Planetary-Scale Interactions and Blocking Over the North Atlantic Ocean. NASA/MSFC Global Scale Atmospheric Processes Research Program Review, July 7-9, 1992.

Smith, P.J.: An Updated Conceptual Model of Surface Cyclone Evolution. Ninth Extratropical Cyclone Workshop, 3-7 December, 1995, Monterey, CA.

Smith, P.J.: The Dynamics of an Early Winter, Explosive Cyclone Development. 2nd Winter Weather Workshop, February 15-16, 1996, Madison, WI.

Smith, P.J.: The Sensitivity of Cyclone Central Pressure Change to the Level of Maximum Diabatic Heating. 10th Extratropical Cyclone Workshop, 22-26 September, 1997, Val Morin, Quebec.

Smith, P.J.: The Importance of Horizontal Distribution of Heating in Extratropical Cyclone Development. 50th Anniversary Celebration, Department of Atmospheric and Oceanic Sciences, September 13-15, 1998, Madison, WI.

Parsons, K., and P.J. Smith: The Role of Subsynoptic Processes in Synoptic-Scale Extratropical Cyclone Development. 11th Extratropical Cyclone Workshop, 28 August-1 September, 2000, Monterey, CA.

Melick, C.J., and P.J. Smith: A Comparison of Vertical Motions obtained from Different Forms of the Omega Equation. 12th Extratropical Cyclone Workshop, 22-26 September 2003, Val Morin, Quebec.

D. SERVICE

Department

Outreach and Minority Affairs: Chair, 2002-2003 Promotion Committee: 1981-present Undergraduate Committee: 1967-71, 1975-2004; Chair 1969-71, 1976-83, 1989-95 Student Cases Committee: 1967-69; Chair 1968-69 Building Committee: 1968-72 Ad hoc Committee on Courses Suitable for other Departments: 1974, Chair Coordinator of undergraduate counseling - meteorology: 1967-72; 1975-present Coordinator of undergraduate placement - meteorology: 1973-present Department Head Search Committee: 1976, 1990 Chairman - Atmospheric Sciences Search Committee: 1987, 1990, 1994 Host - School of Science Scholar Faculty Host Program: 1990

School of Science

Ad hoc Committee on Interdisciplinary Courses: 1970-72 Ad hoc Committee on Undergraduate Degree Requirements: 1971-72 Ad hoc Committee on Quality of Instruction: 1976 School of Science Council: 1977-82, 1991-94 Promotion Committee: 1983-86 Elections Committee: 1988-90 Student Cases Committee: 1990-2002 Scholarship Committee: 1996-2004

University

Academic Progress and Records Committee: 1971-72; 1973-76 Grievance Steering Committee: 2001-2004

Community Service

Participation in High School Day and Parents Day programs Regional Science Fair Judge: 1968-92 International Science Fair Judge, Notre Dame: 1974 Mathematics tutor, Klondike Junior High School: 1978-82 Klondike PTO: Vice President, 1978-79; President, 1979-80 Selection Committee, Klondike Junior High School Principal, 1979 President, Tippecanoe Swim Club, 1979-80, 1982-83, 1985-86

Manuscript Reviews

McGraw-Hill Book Co. Prentice-Hall, Inc. West Publishing Co. Monthly Weather Review Bulletin of American Meteorological Society **Tellus** Journal of Applied Meteorology Journal of the Atmospheric Sciences Journal of Geophysical Research Indiana Academy of Science Climatological Bulletin Atmospheric Research Journal of Climate International Journal of Climate Journal of the Meteorological Society of Japan Journal of the American Water Resources Association Weather and Forecasting

Proposal Reviews

National Science Foundation National Aeronautics and Space Administration National Oceanic and Atmospheric Administration NCAR - Scientific Computing Division National Sciences and Engineering Research Council of Canada Formation de Chercheurs et l'Aide a la Recherche (Quebec) Foundation for Research, Science and Technology (New Zealand)