

ROBERT L. VERTREES

Assistant Professor Emeritus
School of Environment and Natural Resources
College of Food, Agricultural, and Environmental Sciences
The Ohio State University
email: rlvertrees@yahoo.com

EDUCATION

Ph.D. 1974, Michigan State University
Fields of Study: Resource Development Economics and Policy, Regional and International
Resource Development, Methods of Resource Analysis, Philosophy of Science and Social Science
Dissertation title: The incidence of certain beneficial and adverse affects of public water pollution
control measures upon manufacturing industry in Michigan

M.S. 1967, Michigan State University
Major: Resource Development
Minor: Agricultural Production Economics
Thesis title: A survey of nonresident landowners of ten or more acres in Antrim and Kalkaska
Counties, Michigan

B.S. 1961, Purdue University
Major: Conservation Education

ACADEMIC EXPERIENCE

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| 1976-2004 | The Ohio State University, School of Environment and Natural Resources Assistant Professor |
| 1973-1976 | South Dakota State University, Department of Economics Assistant Professor |
| 1969-1972 | University of Massachusetts, Department of Agricultural and Food Economics Instructor |
| 1967-1969 | Michigan State University, Department of Resource Development Research Assistantship, 1968-1969 Research Assistantship, Teaching Assistantship, 1965-1966, 1967-1968 |

Other Related Employment

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| 1961-1965 | United States Marine Corps, Infantry Second Lieutenant and First Lieutenant |
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PUBLICATIONS

Referred - published

Davey, A.L., and R.L. Vertrees. 1999. Comparative analysis of stakeholder's attitudes toward the human-environment relationship in two Great Lakes' Areas of Concern. *The Toledo Journal of Great Lakes' Law, Science, & Policy* 2(1):13-32.

Thomas, S.K., D.W. Floyd and R.L. Vertrees. 1993. Industry association influence upon state aquaculture policy in the North Central Region. *Ohio Journal of Science* 93(1):19-26.

Thomas, S.K., R.L. Vertrees and D.W. Floyd. 1993. Aquacultural marketing law: State-level regulatory approaches in the North Central Region. *Journal of Applied Aquaculture* 2(1):65-84.

Floyd, D.W., R.M. Sullivan, R.L. Vertrees and C.F. Cole. 1991. Natural resources and aquaculture: Emerging policy issues in the North Central States. *Society and Natural Resources* 4(3):123-131.

Heffner, D.E., and R.L. Vertrees. 1991. The feasibility of using Ohio's police power to directly protect wetlands as indicated by a comparative analysis of Ohio, Michigan, and Indiana laws. In, A.A. Jennings and N.E. Spangenberg (eds.), *Surface and Ground Water Quality: Pollution Prevention, Remediation, and the Great Lakes*, TPS 91-1. Bethesda, MD: American Water Resources Assoc. pp. 3-12.

Vertrees, Robert L. 1987. Introduction: Federal land resource planning_inter-agency comparisons. In *Trends*, a publication of the Park Practice Program of the National Park Service and the National Park and Recreation Association. 24(2):2-6 & 46-47.

Vertrees, Robert L. 1985. Water resources applications of OCAP_Ohio's CNRIS. In *Computer Applications in Water Resources*, Proceedings of the Specialty Conference sponsored by the Water Resources Planning and Management Division and the Buffalo Section of the American Society of Civil Engineers, ed. Harry C. Torno, pp. 68-77. New York: American Society of Civil Engineers. (Presented at the Specialty Conference on June 10th in Buffalo, N.Y.)

Vertrees, Robert L. 1985. A matrix and accompanying classifications for identifying water research problems and needs. *Water Resources Bulletin* 21(1):115-133.

Vertrees, Robert L. and M. Murfin. 1980. Teaching the legislative process: Evaluation of classroom and library instruction and a legislative history exercise. *Government Publications Review* 7A(5):505-515.

Other - published

Hushak, L.J., D.W. Floyd and R.L. Vertrees. 1992. Aquaculture: A competitive enterprise in the North Central States? *Ohio's Challenge: The Magazine of Agricultural Economics and Rural Sociology* 5(1):3-5.

Vertrees, Robert L. 1985. Fuller use of the Ohio Capability Analysis Program. *Ohio Report* 70(1):12-15.

Vertrees, Robert L. 1974. An economic framework for the reservoirs. *South Dakota Farm and Home Research* 25(3):17-21.

William, Ray D., and Robert L. Vertrees. 1995. Systematic and systemic thinking tools; and Robert L. Vertrees. A concept map of the 'Tom and Joan Karen' decision case. In *Teaching and Learning with Cases: Promoting Active Learning in Agriculture, Food and Natural Resource Education*, Proceedings of a workshop held in Chaska, Minnesota, July 6-8, ed. Scott M. Swinton, pp. 18-20.

Abstracts and Notes

Vertrees, R.L. 2000. A classification of digital geo-referenced data. *The Ohio Journal of Science* 100(1):A-29.

Vertrees, R.L. 1993. Toward the improvement of communications in science and technology: Reflections of an academic in the field of natural resources policy. *The Ohio Journal of Science* 93(2):42.

Vertrees, R.L. 1992. Some means of evaluating technology before and after its adoption. *The Ohio Journal of Science* 92(2):6.

Vertrees, R.L. and J.D. Bossler. 1991. The language of geographic information management. Ohio ARC/INFO Users Group, Fall Meeting: Program and Abstracts. Columbus, OH.

Frost, S.L. and R.L. Vertrees. 1991. Section J of the Ohio Academy of Science: Its past is prologue to what future? *The Ohio Journal of Science* 91(2):54.

Thomas, S.K., R.L. Vertrees and D.W. Floyd. 1991. Industry association influence upon state aquaculture policy--A comparative analysis in the North Central Region. *The Ohio Journal of Science* 91(2):54.

Floyd, D.W., R.W. Sullivan, R.L. Vertrees and C.F. Cole. 1990. Fish, wildlife and aquaculture: Emerging policy issues in the midwest. In, *52nd Midwest Fish & Wildlife Conference*, Minneapolis.MN. pp. 231.

Seehafer, E.M., D.M. Floyd and R.L. Vertrees. 1990. Evaluating citizen participation on the Wayne National Forest. In, *The Third Symposium of Social Science in Resource Management*. Dept. of Recreation, Park and Tourism Sciences and Dept. of Rural Sociology, Texas A&M University, College Station. pp. 104-105.

Seehafer, E.M., R.L. Vertrees and D.M. Floyd. 1990. Evaluating public input into National Forest Planning: Satisfaction with a U.S.F.S. citizen participation program. *The Ohio Journal of Science* 90(2):28.

Vertrees, R.L. 1990. An etymological approach to improve communication about ways of applying knowledge from two or more disciplines. *The Ohio Journal of Science* 90(2):28.

Vertrees, Robert L. 1989. A proposed matrix approach to describing public agency collection, analysis, and reporting of data about water resources in Ohio. In *The Ohio Journal of Science*, 98th Annual Meeting of the Ohio Academy of Science. Western Campus of Cuyahoga Community College, Parma, Ohio. April 28-30. 89(2):27.

Vertrees, Robert L. 1988. Ex post and counterfactual analyses using a computer-based natural resources information system. In *The Ohio Journal of Science*, 97th Annual Meeting of the Ohio Academy of Science. The Ohio State University at Newark. April 29-30. 88(2):29.

Vertrees, Robert L. 1987. The map users' information network of the Center for Mapping. In *The Ohio Journal of Science*, 96th Annual Meeting of the Ohio Academy of Science. Malone College, Canton, Ohio. April 24-26. 87(2):30.

Vertrees, Robert L. 1983. Using the Ohio Capability Analysis Program to study land use effects of existing land policies. In *Abstracts*, pp. 23-24. Soil Conservation Society of America, 38th Annual Meeting, July 31-August 3, Hartford, Conn.

Vertrees, Robert L. 1981. Planning data about water used for agricultural irrigation: A study of existing sources and recommendations for improvement. In *Second Annual Water Resources Symposium of the Indiana Water Resources Association*. McCormick's Creek State Park, Spencer, Indiana, Session 3. June 24-26.

Monographs or Bulletins

Vertrees, R.L., and G.W. Mullins and M.M. Cox. 1993. "Understanding Ohio's Surface Water Quality Standards." Columbus, OH: Ohio Environmental Protection Agency. 42 p.

Vertrees, R.L., G.W. Mullins and M.M. Cox. 1993. "Citizen's Guide to Understanding Ohio's Surface Water Quality Standards." Columbus, OH: Ohio Environmental Protection Agency. 8 p.

Thomas, S.K., R.K. Sullivan, R.L. Vertrees and D.W. Floyd. 1992. "Aquaculture Law in the North Central States: A Digest of State Statutes Pertaining to Production and Marketing of Aquacultural Products." Technical Bulletin Series #101. East Lansing, MI: North Central Regional Aquaculture Center, Michigan State Univ. 76 p.

Stiefel, R., R. Vertrees and J. Murray. 1986. "Directory of Ohio's Water Management Associations and Organizations." Columbus, OH: Water Resources Center, The Ohio State Univ. 66 p.

Vertrees, R.L. 1985. "A Guide for Subsequent Users of Original Data Bases of the Ohio Capability Analysis Program." Report 85/1. Columbus, OH: School of Natural Resources, The Ohio State Univ. 91 p.

Stiefel, R.C. and R.L. Vertrees. 1980. "Five-Year Water Resources Research and Development Plan." Columbus, OH: Water Resources Center, The Ohio State Univ. 59 p.

Vertrees, R.L. 1978. "Some Local Economic Impacts of the Missouri River Reservoirs within South Dakota." Final Report of the U.S. Office of Water Research and Technology Project B-025-SDAK. Brookings, SD: Water Resources Center, South Dakota State Univ. [Also available from the National Technical Information Service, Springfield, Virginia, No. PB-291 752/4GA.] 464 p. and append.

Barlowe, R., M. McGuire and R. Vertrees. 1969. "Michigan Water Resource Needs." Lansing, MI: Michigan Water Resources Commission. 52 p.

Sections in Monographs or Bulletins

Vertrees, R.L. and D.S. Crecelius. 1989. "Classifications of applications of the Ohio Capability Analysis Program (OCAP)." In Sample Capability Analyses. Columbus, OH: Ohio Capability Analysis Program, Ohio Dept. of Natural Resources. pp. 31-35.

Vertrees, R.L. 1978 "Water needs for crop irrigation." In Agricultural Aspects of the Water Development Plan for Southeast Ohio. Columbus, OH: Water Resources Committee, College of Agriculture and Home Economics, The Ohio State Univ. pp. 18-56.

PAPERS PRESENTED

Invited

1999 "Over one-hundred years of watershed-based, and related, institutions and policies in the U.S.: So?" Paper presented to a seminar of the OSU Environmental Policy Initiative, Nov. 22, 1999, 31 p.

1986 "Introduction to the panel on approaches to federal and resource planning: Interagency comparison." Paper presented on April 24 during the section on "Natural Resource and Public Land Use Studies" of the 28th Annual Conference of the Western Social Science Association, Reno, NV. 22 p.

1985 "Some classifications and matrices of water problems and research fields used in federal water resources research management." Paper appended to the Discussion Paper "Some practical considerations for assessing federal water resources research support," by Bernard B. Berger and Doris Ullman, presented at the National Conference on Water Resources Research, Feb. 4-6, 1985 at Chevy Chase, MD.

"Hypothesis: The matrix approach to water resources research management can be usefully applied as a holistic approach to technology transfer program management." Workshop on "A Holistic Approach to Program Planning, Implementation, and Evaluation" during the Technology Transfer Exchange Forum, Michigan State University, Water Resources Institute, East Lansing, October 7.

1977 "Some potential issues and challenges related to financial and economic aspects of controlling non-point sources of water pollution." Proceedings of Seminar on Non-Point Sources: Emerging Problem in Water Resources Management in Ohio. Columbus: The Ohio State University Water Resources Center, 1977, pp. 79-116.

1975 "An estimation of certain direct and indirect income effects of providing loans to irrigators in South Dakota from 1976 through 1980 from a state fund of \$10,000,000." Testimony presented on September 9, 1975 before the Legislative Affairs Committee of the South Dakota State Legislative Research Council.

Contributed

1988 With John D. Bossler and Peter L. Croswell. "Plans Underway at The Ohio State University to Join and Apply Automated Geographically Referenced Data." Proceedings, National Governors' Assn. Conference on "Piecing the Puzzle Together: A Conference on Integrating Data for Decisionmaking. Washington, D.C.: National Governors' Association.

1985 "Criteria to Determine Recreation Developments by the Public and Private Sectors." Proceedings, Natural Resources Conferences and Recreation and Leisure Sciences Section, Michigan Academy of Science, Arts, and Letters. East Lansing, Mich.: Michigan State University, Dept. of Park and Recreation Resources.

1984 "Using the Ohio Capability Analysis Program (OCAP) to Depict Land-Use Impacts of Public Programs." Technical Papers, 1984 ASP-ACSM Fall Convention. Falls Church, Va.: American Society of Photogrammetry and American Congress on Surveying and Mapping.

Guest Lectures At Other Institutions

1989 "Professional opportunities for graduates of interdisciplinary programs in water resources development and management." Water Professionals Seminar class, The International Center for Water Resources Management, Central State University, Wilberforce, Ohio. March 14.

PROFESSIONAL SOCIETIES

The Ohio Academy of Science

Fellow, awarded in 1999

Member, Executive Committee, 1992-93

Member, Membership Committee, 1992-93

Membership Chairman, Natural Resource Section, 1991-92

Vice-President, Natural Resources Section, 1990-91

Reviewer, The Ohio Journal of Science, 1991

Local Arrangements Chairman, Natural Resources Section, Centennial Annual Meeting, 1990-91

Soil and Water Conservation Society, All-Ohio Chapter

Coordinator, Awards Committees, 1999

Chairman, Outstanding Publications Committee, 1999-present; Member, 1988-1990; 1995-1996

Member, Nominations Committee, 1990-1993

Member, Scholarship Committee, 1989

Chairman, Outstanding Publications Committee, 1988

Chairman, Transportation Committee for the 43rd Annual Meeting of the Society held in Columbus, 1988

Member, Student Services Committee of the Society, 1986-1987

Chairman, Legislative Liaison Committee, 1985

Chairman, Water Resources Committee, 1982
American Water Resources Association
Reviewer, Water Resources Bulletin
Member, Education Committee, 1993
Member, Student Activities Committee, 1993
Member, Water Resources Policy Committee

The Universities Council on Water Resources
Delegate, The Ohio State University, 1988-present
Reviewer, research proposals submitted to USGS, 1988, 1992

Water Management Association of Ohio
Co-Chairman, Committee to Study the Creation of a Division of Research and Data Management, 1998 (the Division was created in 1998)
Chairman, Spring Meeting Committee, 1993; Member, Spring Meeting Committee, 1996
Advisor, Awards Committee, 1991
Chairman, Awards Committee, 1990
Member, Strategic Planning Committee, 1988
Member, Advisory Committee, Water Resources Foundation of Ohio, 1986-1989, 1991-1993
Member, Board of Trustees, 1985-1986, 1991-1993
Co-Chairman and Member, Annual Meeting Committee, 1985, 1988
Reviewer and Editor, Ohio Water Firsts (first draft), a book published by the Ohio Water Management Association, 1984-1985
Chairman, Ad-Hoc Blue-Ribbon Committee on Marketing Ohio's Water Resources, 1984-1985
Member and Editor, Policy Committee in charge of preparing federal and Ohio position statements, 1982-1983

OFFICES AND HONORS

Fellow, The Ohio Academy of Science, awarded in 1999
Honored guest at President's Salute to Undergraduate Academic Achievement banquet, Feb. 24, 1998
Recognition for many years of service as Advisor to Mountain Honorary of the School of Natural Resources, presented Jan. 30, 1998
Outstanding Published Articles Certificate of Achievement, All-Ohio Chapter, Soil and Water Conservation Society, 1985, 1986, and 1995
Award of \$500 (to be spent from an OSU account) in recognition of accomplishments in advising undergraduates in the College of Food, Agricultural, and Environmental Sciences, presented on Oct. 11, 1994
Outstanding Academic Advisor of the College of Agriculture and the School of Natural Resources, presented on May 12, 1994, including an award of \$500
Honorary Inductee into The Honorary 100 in Support of Excellence, Alumni Association, School of Natural Resources, The Ohio State University, 1988
Member of the Year of the Water Management Association for 1984
One of Twenty Finalists, Outstanding Teacher Award, The Ohio State University, 1984

Elected Advisor, 1980-1981, and Honorary Inductee, 1981, Mountain Honorary, School of Natural Resources, The Ohio State University Member, Pi Gamma Mu (The National Honorary of Social Science, inducted in 1974), Gamma Sigma Delta (The Honor Society of Agriculture, inducted in 1979)

Listed in American Men and Women of Science, Who's Who in the Midwest, and Leading Consultants in Technology

Graduated from Purdue University with Distinction, 1961

Member of Navy ROTC, Education, and Agricultural Honoraries at Purdue

Received several Navy ROTC awards at Purdue

Executive Officer with Student Rank of Commander, Student Navy ROTC Battalion, Purdue, 1960-1961

House Manager, 1958-1959, and President, 1959-1960, Marwood Cooperative House

Membership Chairman, 1959-1960, and President, 1960-1961, Student Cooperative Association

One of five finalists, Outstanding Senior Man of Purdue University, 1960-1961

Other Professional Activities

Chairman, Data Sources and Contacts Task Force, Ohio Geographically Referenced Information Program (OGRIP), 1999-present

Member, Executive Committee of the OGRIP Forum, 1998

Member, Metadata Work Group of the OGRIP Forum, 1997-1998

Member, Users and Uses Sub-Committee and Committee, OGRIP, 1989-1992

Editor, First-Year Report of OGRIP, 1990

Member, Interagency Committee on Water Resources Monitoring in Ohio, 1994

Reviewer, Proposed Anti-Degradation Plan for Ohio's Water Quality Standards, Division of Surface Waters, Ohio Environmental Protection Agency (Ohio EPA), 1994

Member, Non-Point Source Advisory Committee, Ohio EPA, 1986-1989

Member, Advisory Committee to Assist the USDA Soil Conservation Service with an Evaluation of Public Law 566 Watershed Projects in Ohio, 1994

Member, Committee to Develop a Dedicated Source of Revenue to Support Soil and Water Conservation Programs in Ohio, 1986-1987

Participant, Session III -- Data Handling, Workshop on Data Problems in Ground Water Quality Management to Facilitate Data Systems Decisions for the Miami Valley Aquifer System Ground Water Management Program of the Miami Valley Regional Planning Commission, 1986

Member, Water Use Advisory Committee, Ohio District, Water Resources Division, U.S. Geological Survey, 1985-1986

Member, Ohio Remote Sensing Steering Committee, 1985-1987

Member, Northwest Ohio Water Plan Update, Division of Water, Ohio Dept. of Natural Resources, 1983

Member, Citizen/Technical Advisory Committee for the Lower Muskingum River Basin Water Quality Management Plan, 1977-1979

ACADEMIC ACTIVITIES

Academic Committee Involvement

School of Natural Resources

Member, Human Dimensions Faculty Group, 1997-present

Member, Academic Affairs Committee, 1976-1985, 1992-1996, 1998-present
Member, Seminar Committee, 1995-1996

Co-Chairman, Wayne S. Nichols Memorial Lecture Series Committee, 1987-1993; Chairman, 1994-1997

Member, Search Committee for Director of the School of Natural Resources, 1988-1989

Chairman, Natural Resources Information System Program Committee, 1984-1987

Member, Graduate Studies Committee, 1984-1987

Member, Research Review Committee, 1986

Member, Committee to Revise Tenure and Promotion Procedures, 1985

Secretary, Self-Study Committee, 1976-1978

Member, Graduate Education and Research Committee, 1976-1977

College of Food, Agricultural, and Environmental Sciences

Member, Ohio Water Resources Education Project, Ohio Cooperative Extension Service, 1992-1993

Member, Committee for William E. Krauss Director's Award for Excellence in Ph.D. Research, 1989

Member, Future Directions and Strategic Planning Conference, Dept. of Agricultural Engineering, 1987-1988

Chairman, Resource Information Systems DATA Squad for Ohio 21 Plan, 1985-1986

Member, Water Resources, Local Government, and Land Resources DATA Squads for Ohio 21 Plan, 1985-1986

Member, Sub-Committee on Human and Community Development, Deans' Awareness Committee, 1980

Chairman, Irrigation Needs Sub-Committee, College Water Committee, 1976-1977

The Ohio State University

Member, Water Resources Center Advisory Committee, 1979-present

Member, OSU Extension Geographic Information Systems Team, 2000 Member, Faculty Focus Group (Coordinated by the Center for Mapping) on Decision Support Systems, 1995-1996

Secretary, Ad-Hoc Committee to Nominate Members of a Faculty Advisory Committee for the Center for Mapping, 1991

Member, Institutional Effects Sub-Committee, Committee to Propose a NSF National Center for Geographic Information and Analysis, 1987

Member, Research Committee, Center for the Commercial Development of Space of the Center for Mapping, 1986-1987

Member, Search Committee for Director of the OSU Bookstores, 1986

Member, Committee to Propose the Center for the Commercial Development of Space for Real-Time Satellite Mapping, 1985

Member, University Bookstores Committee of the OSU Senate, 1983-1986

Academic Program Development

1984-1988 Chairman, Natural Resources Information Systems (NRIS).

Dr. Vertrees was in charge of writing the research and other proposals that led to the establishment of the NRIS Program and the NRIS Laboratory in the School of Natural Resources. Under this

program, three new faculty with expertise in geographic and land information systems were hired and a \$200,000 research laboratory was created.

Academic Curricula Development

School of Natural Resources, The Ohio State University

1999 Integrated Natural Resource Policy and Planning (undergraduate)

1992 Natural Resources and Environmental Policy (graduate)

1991 Sustainable Resource Management (undergraduate)

1983 Land Resources Information Systems (undergraduate)

Reclamation Policy and Planning, Natural Resources Development Programs (undergraduate)

1978 Land and Water Resources Policy and Planning, Natural Resources Development Programs (graduate)

Recreation Resources Economics, Division of Parks and Recreation Administration (undergraduate)

Watershed and River Basin Policy and Planning, Natural Resources Development Programs (undergraduate)

Other Universities

1975 Regional Planning, Interdepartmental curriculum, South Dakota State University (undergraduate and M.S.)

1970 Environmental Economics, Dept. of Agricultural and Food Economics, University of Massachusetts (undergraduate)

Funded Research Grants and Contracts

Principal Investigator

1996 "A Proposal for Cooperation: The Rickenbacker Port Authority and the OSU Center for Mapping," with members of the Faculty Focus Group on Decision Support Systems. Funded by the OSU Research Foundation Project 732550. \$1,093.

1995 "Inventorying and Reporting the Availability of Digital, Geographically Referenced Data for the Region Surrounding the Rickenbacker Port Authority." Funded by the OSU Center for Mapping in Support of the Faculty Focus Group on Decision Support Systems. OSU Research Foundation Project 313208. \$4,343

1992- 1994 "A Geographic Information System for Ohio's Fish Farming Development," with K. Dabrowski and D.A. White. Seed Grant from Piketon Research and Extension Center, The Ohio State University Project 92-18. \$8,000.

1991- 1995 "Development of an Ecological Classification System for the Wayne National Forest," with J. R. McClenahan and D.M. Hix (Co-Principal Investigators) and M.K. Wali, G. Hall, J.L. Vankat, O. Loucks and J.R. Runkle (Investigators). Funded through the Northeastern Forest Experiment Station, U.S. Dept. of Agriculture. OSU Research Foundation Project 725159. \$547,177.

1991- 1993 "A Research and Development Proposal for Communicating Water Quality Standards: An Environmental Education Activity," with G.W. Mullins. Funded through the Ohio

Environmental Education Fund, Ohio Environmental Protection Agency. OSU Research Foundation Project 725241. \$40,139.

1990- 1993 "Integration and Application of Automated Spatial Data about Natural Resources in Ohio." Appropriated funds from the Ohio Agricultural Research and Development Center, Project S-533. \$1,410.

1990- 1992 Objective 4b "Identification of Policy Impediments and Incentives for Expanded Aquaculture Development: Marketing Policies of Current Economic Conditions and Future Market Opportunities for Aquaculture in the North Central U.S." Funded through the North Central Regional Aquaculture Center at Michigan State University in cooperation with the U.S. Dept. of Agriculture. OSU Research Foundation Project 723175. \$32,476.

1989- 1990 "Development and Demonstration of a Digital Geographic Data Base for the Wayne National Forest," with Craig B. Davis, Earl F. Epstein and Dana C. Tomlin. Project administered by the The Ohio State University, Center for Mapping as a project of the Center for the Commercial Development of Space, which is funded under Project NAGW-973 of the National Aeronautics and Space Administration. OSU Research Foundation Project 722825. Initial funding of \$50,000 expected to be increased to \$85,000.

1989- 1990 "Development and Testing of a Digital Geographic Data Base for a Suburbanizing Area." Investigator's Fund Award, School of Natural Resources, The Ohio State University. \$400.

1988 "Collection and Organization of Mapped Information about Water and Related Land Resources for Use in a Proposal for an Ohio Water Atlas." Project administered by the Water Resources Center, The Ohio State University. Director's Technology Transfer Account. Approx. \$2,350.

1987- 1989 "Remote Sensing for Natural Resources Inventory and Assessment in Ohio," with Robert W. Douglass and Joseph D. Kasile. Appropriated funds from the Ohio Agricultural Research and Development Center. Project A-876. Approx. \$4,600.

1987 "Equipment for Natural Resources Information Systems Laboratory," with Craig B. Davis and others. Matching grant from The Ohio State University and the U.S. Department of Education, Academic Facilities Grant Program. OSU Research Foundation Project 720397. \$100,000 matching grants for a combined grant of \$200,000.

1986- 1988 "Establishment of Detailed Plans for the Natural Resources Information Systems Program." Funds from the University Research Grant Program administered by the Office of Research and Graduate Studies, The Ohio State University. Partially funded from the Regents' Research Challenge Program. Approx. \$40,000.

1986- 1989 "Survey of Computerized Spatial Information and Data Applicable to Natural Resources in Ohio." Appropriated funds from the Ohio Agricultural Research and Development Center. Project H-838. (including non-funded extension). Approx. \$1,400.

1986 "Development of an Ohio Water Resources Directory." Project administered by the Water Resources Center, The Ohio State University. Director's Technology Transfer Account. Approx. \$5,000.

1985 "Assistance in Preparation for Review of the O.S.U. Water Resources Center by the U.S. Geological Survey." Project administered by the Water Resources Center, The Ohio State University. Director's Technology Transfer Account. Approx. \$3,500.

1984- 1986 "Updating Regression Models Explaining Use of Ohio's Agricultural Use Value and Forest Tax Programs." Appropriated funds from the Ohio Agricultural Research and Development Center. Project S-509. Approx. \$2,100.

1982- 1984 "Application of Computer-Based Natural Resource Information Systems to the Analysis of Existing Land Policies." Appropriated funds from the Ohio Agricultural Research and Development Center. Project S-499. Approx. \$3,800.

1980 "Development of a Five-Year Plan for the Water Resources Research Center of The Ohio State University." Funds from Office of Water Research and Technology, U.S. Dept. of the Interior. Project administered by the Water Resources Center, The Ohio State University. Project RF712430. Approx. \$12,600.

1979- 1982 "Extent of Use and Land-Use Effects of Three Differential Assessment Programs in Ohio." Appropriated funds from the Ohio Agricultural Research and Development Center. Project S-472. Approx. \$14,600.

1973- 1975 "Regional Income and Employment Effects of Water Resources Investments." Funds from Office of Water Research and Technology, U.S. Dept. of the Interior. Project administered by the Water Resources Institute, South Dakota State University. Project B-025-SDAK. Approx. \$25,000.