

Jerald J. Fletcher

Curriculum Vita

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Professional Experience

- 1994-: Professor of Energy, Environmental and Resource Economics,
Division of Resource Economics and Management (1994-present)
Director, Natural Resource Analysis Center (1994-present)
Director, US-China Energy Center (2007-present)
Adjunct Professor, Department of Economics (1994-present)
Faculty Research Associate, Regional Research Institute (1994-present)
Director, Division of Resource Management (Nov 1, 2010-Oct 15, 2013)
Interim Director, Division of Resource Management (Sep 1, 2009-Oct 31, 2010)
Chair, Agricultural and Resource Economics Program (1996-2002)
West Virginia University, Morgantown, WV 26506-6108
- 2007-
12 Institute Fellow, NETL Institute for Advanced Energy Solutions
- 1989-
94: Associate Professor, Division of Resource Management;
Adjunct Associate Professor, Department of Economics (1993-94);
Faculty Research Associate, Regional Research Institute (1990-94); and
Adjunct Assoc. Professor, Mineral Economics, (1990-91 prior to merger);
West Virginia University, Morgantown, WV 26506-6108
- 1982-
89: Assistant Professor, Department of Agricultural Economics,
Purdue University, West Lafayette, IN
- 1987: Visiting Assistant Professor, Department of Agricultural and Applied Economics,
University of Minnesota, St. Paul, MN.
- 1977-
82: Post Graduate Research Agricultural Economist (1980-82),
Research Assistant (1978-80), Dept. of Agricultural Economics, and
Teaching Assistant (1977-78, Dept. of Economics, U. of California, Davis, CA.
- 1976-
77: Lecturer, Mathematics Department,
San Francisco State University, San Francisco, CA.

Education

Ph.D.	1982	University of California, Davis	Agricultural Economics
M.A.	1979	University of California, Davis	Economics
B.S.	1976	University of Wyoming	Mathematics

Administration

Experience in administration comes primarily from the five areas outlined below.

(1) Director of the Natural Resource Analysis Center (NRAC)

I have operated as the director of NRAC since 1994. As of 2007, NRAC was reintroduced as the first Davis College Center. NRAC was developed to provide a focus on spatial methods applied to natural resource and environmental management problems in an interdisciplinary environment. The development of NRAC provided the primary capabilities needed to meet some of the regulatory environmental management needs of the West Virginia Department of Environmental Protection. The first full time staff member was added in 1995 with a second in 1998 (both M.S. level). Through the end of 2002, external resources primarily supported projects and development efforts focused on GIS and decision support applications for regulatory agencies and citizen groups.

Beginning in 2003, the focus of NRAC programmatic development efforts was redirected to more general research needs. NRAC currently supports ten externally funded positions: two Ph.D. (a Research Assistant Professor and primary support for an Extension Associate Professor), five M.S. level research staff and three support staff positions. NRAC programs have provided support for 4-10 graduate students each year for the past fifteen years – initially for M.S. candidates but with a current emphasis on the Ph.D. program. As a small program, a Ph.D. with an interdisciplinary focus defines a niche market to attract both funding and graduate students.

Research funds have approached \$1 million per year since 2001. As director, I have written proposals, coordinated research, and administered funds. Financial resources come from fee for service activities in addition to the usual contracts, grants, and research projects. NRAC is a technologically intensive unit with a heavy emphasis on computer analysis and applications. All of the current first line computer resources were obtained with external funds. The change in focus in 2003 was designed to increase significantly research output as measured by refereed publications and research funding. Funding provided by external projects (including the US-China Energy Center) has exceeded \$35 million over the past five years. These activities include over \$32 million in resources external to WVU and have provided nearly \$7 million for directly administered research programs.

(2) Director of the US-China Energy Center and Founding Director of the US Advanced Coal Technologies Consortium of the US-China Clean Energy Research Center

Initiated in 2007 as a joint activity between the Davis College, the WVU Extension Service and the National Research Center for Coal and Energy, the US-China Energy Center (USCEC) developed out of research projects and related activities in China focused on energy with emphasis on clean coal utilization. Activities of the USCEC include research, communication and economic development for West Virginia. In 2010, the USCEC took a leadership role in developing a consortium consisting of research universities, state geological surveys, national labs, non-profit organizations and corporate partners (the US Advanced Coal Technology Consortium – US ACTC) to respond to a USDOE FOA to participate in the newly constituted US-China Clean Energy Center, a cooperative arrangement supported by both the US and Chinese governments. As Director of the US ACTC, I am responsible for organizing, managing and leading a five year, \$25 million program to address clean coal including carbon

capture and storage issues in partnership with a China ACTC. The fifth year of federal funding was received in September, 2014 and additional support from our industrial partners has been obtained. The USCEC is administered through the Natural Resource Analysis Center.

(3) Director, Division of Resource Management (RESM), Davis College

From September, 2209, through October, 2013, I served as the Director of the Division of Resource Management (RESM) with a total of 33 faculty members, four with joint appointments with other units and four with other administrative positions within WVU. The Division has five support staff and two professional positions. Academically, RESM is composed of three programs: Agricultural and Extension Education (AGEE), Agricultural and Resource Economics (ARE) and Landscape Architecture (LARC). Each program has undergraduate and master level academic programs. In addition, RESM is home to an interdisciplinary PhD program with four quite separate majors: Natural Resource Economics (NRE), Agricultural and Extension Education (AEE), Resource Management (RM) and Human and Community Development (HCD). The first two are disciplinary majors in ARE and AGEE respectively. Resource Management combines a major in an appropriate discipline with master's level training in economics to provide a foundation for a field of study determined by the student working with an appropriate advisory committee. The PhD in Human and Community Development is a flexible program for those with sufficient experience to determine their interests and goals. Students identify appropriate advisors and work with this committee to define appropriate course work and a research area.

(4) Graduate Coordinator for the ARE graduate programs and the interdisciplinary PhD program in Resource Management and Sustainable Development (RMSD)

The RMSD program is an interdisciplinary program. While the Division of Resource Management serves as the administrative home, faculty from other programs and disciplines serve as advisors. Before assuming the position of Director, my time as graduate coordinator convinced me that there is a need and demand for integrated interdisciplinary graduate programs.

(5) Chair, Agricultural and Resource Economics (ARE)

Served as the ARE program chair for six years (FY 1997-2002). ARE was then a small department (nine faculty) that supports undergraduate, M.S., and Ph.D. programs. Budgets were tight and internal financial support for graduate programs declining. Continued growth of externally funded programs was a primary goal to support research activities and graduate student support.

Summary of Publications, Research Grants, and other Activities

Publications: author of 45 articles for refereed journals and book chapters, and more than 200 other papers, publications, and presentations to various research audiences as well as to the general public.

Research grants and contracts: principal or co-principal investigator on over \$57 million in research grants/projects that have contributed nearly \$40 million to university research programs; nearly \$15 million provided support for directly supervised research programs. Funding has been received from over 165 grants or contracts from federal agencies including USDA, USEPA, USDOE, and USDOJ and a variety of state agencies, non-governmental organizations, and private foundations and companies.

Consulting experience: advisor/consultant to state agencies such as the WV Division of Environmental Protection, the WV Division of Natural Resources, and the Bureau for Public Health; federal agencies such as the US Geological Survey, multiple agencies within USDA, USEPA, the Bureau of Land Management, the US Army Corps of Engineers, and the US Department of Energy; and various other public and private organizations including the Canaan Valley Institute, the Conservation Fund, the Environmental Law Institute, the World Bank, the Conservation Technology Information Center, and various private businesses and consulting companies.

Research Interests

Energy, Environmental and Natural Resource Economics; Interdisciplinary Studies; Quantitative Methods; Computer Applications in Applied Economic Analysis; Spatial Methods; Modeling

Professional Affiliations

Agricultural and Applied Economics Association
American Economic Association
Association of Environmental & Resource Economists
European Association of Environmental & Resource Economists
International Association for Energy Economics
National Association of Agricultural Economics Administrators
Northeast Agricultural and Resource Economics Association
United States Association for Energy Economics

Selected Professional Service Activities

American Agricultural Economics Association
2014-15 Chair, National Association of Agricultural Economics Administrators
2006-16 C-FARE Board of Directors (AAEA representative through 2010), now at-large
2002-03 AAEA Task Force on Image and Name
1990- AAEA Representative to the Council of Professional Associations on Federal Statistics (COPAFS) (1995 to present, Board of Directors; 1996-1997, Treasurer, 1998, Vice Chair; 1999-2000, Chair; 2001-2002, Past-Chair)
1989- Economics Statistics and Information Resources Committee (Chairman, 1991-94)
1989-99 Liaison to Census Advisory Committee on Ag Statistics (Chairman, 1996-97)
Other Service
1989-91 West Virginia Water Research Institute, Research Advisory Committee
1987-88 Illinois-Indiana Sea Grant Program, Research Advisory Committee

Awards and Honors

1997-98 ESCOP/ACOP Leadership Program
1990 Outstanding Journal Article Award published during 1989 in the Canadian Journal of Agricultural Economics, from the Canadian Agricultural Economics and Farm Management Society (with V. Adamowicz and T. Graham-Tomasi)
1987 Soil Conservation Society of America Award of Merit as part of North Central Regional Research Committee NC-162
1979-81 Henry A. Jastro Fellowship in Agricultural Economics, UC Davis
1977-78 William W. Stout Memorial Fellowship in Economics, UC Davis

Service Activities

Active in committee and service activities at many levels including departmental, college, university and professional service. Served on a variety of task forces and working groups for state and local organizations and as an advisor or consultant to various public agencies and private organizations. Serve as a reviewer for numerous professional journals and publications. Active in community service and civic organizations.

Summary of Teaching Experience

West Virginia University (1989-2014)

Undergraduate course in Environmental Economics; M.S. courses in Policy, Quantitative Methods, and Econometrics; M.S. and Ph.D. Graduate Seminar, Ph.D. course in Advanced Environment Economics, Ph.D. course in Energy Economics

Purdue University (1982-1988)

M.S. and Ph.D. courses in Production Economics

University of Minnesota (1987)

Ph.D. course in Resource Economics

University of California, Davis (1977-1978)

Teaching Assistant for Introductory Microeconomics

San Francisco State University (1976-77)

Introductory courses in College Algebra, Trigonometry, and Calculus

Involvement in Graduate Programs

I was active in restructuring the graduate program and implementing new foci at WVU. I served as the Graduate Coordinator for the ARE graduate programs and the interdisciplinary Resource Management and Sustainable Development (RMSD) PhD program. The focus of the Ph.D. at WVU developed in the early 1990s was on environmental and resource economics; this was broadened to the explicitly interdisciplinary RMSD Management PhD with Natural Resource Economics as one of four options.

Summary of Graduate Students

	As Major Professor				As Member of Advisory Committee			
M.S.	Completed	32	In Progress	0	Completed	25	In Progress	0
Ph.D.	Completed	19	In Progress	7	Completed	25	In Progress	0
PostDoc (as advisor and supervisor)					Completed	5	In Progress	0

Nineteen Ph.D. and thirty-two M.S. students have completed to date. Two M.S. students (Van Beek (1988) and Mers (1989)) received the award for outstanding M.S. thesis from the Dept. of Agricultural Economics, Purdue University, for the year the theses were completed. Dai received the award for outstanding Ph.D. dissertation from the Department for 1992. Strager received a similar award from the Agricultural and Resource Economics program at West Virginia University for 1995. Six Ph.D. students are currently in process. Four Post-Doctoral Scholars have been supported by externally funded research projects.

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Publications and Presentations

Publications in Refereed Journals

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- Herath, Janaranjana, Tesfa Gebremedhin and Jerry Fletcher. 2013. "Adult Obesity and Arthritis: An Empirical Analysis for West Virginia, USA." *International Journal of Health Research and Innovation*, 1(2):1-12.
- Michieka, Nyakundi M., Jerald Fletcher and Wesley Burnett. 2013. "An empirical analysis of the role of China's exports on CO₂ emissions." *Applied Energy*. 104: 258-267.
- Michieka, Nyakundi M. and Jerald J. Fletcher. 2012. "An Investigation of the Role of China's Urban Population on Coal Consumption," *Energy Policy*, 48: 668-676.
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- Xiarchos, Irene M. and Jerald J. Fletcher. 2009. "Price and Volatility Transmission between Primary and Scrap Metal Markets," *Resources, Conservation and Recycling*, 53(11, September): 653-663.
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- Collins, A. R. Rosenberger, and J. Fletcher. 2005. "The Economic Value of Stream Restoration," *Water Resources Research*, 41(2) February.
- Zhao, G.X., G. Lin, J.J. Fletcher, and C. Yuill. 2004. "Cultivated Land Changes and Their Driving Forces: A Satellite Remote Sensing Analysis in the Yellow River Delta, China," *Pedosphere*, 14(1):93-102, February.
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- Norton, Nancy Anders, Tim T. Phipps, and Jerald J. Fletcher. 1994. "Role of Voluntary Programs in Agricultural Nonpoint Pollution Policy," *Contemporary Economic Policy*, January, 12(1):113-121.
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- Dai, Qi, Jerald J. Fletcher, and John G. Lee. 1993. "Incorporating Stochastic Variables in Crop Response Models: Implications for Fertilizer Decisions," *American Journal of Agricultural Economics*, May, 75(2):377-386.
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- Graham-Tomasi, Theodore, Wiktor L. Adamowicz, and Jerald J. Fletcher. 1990. "Errors of Truncation in Approximations to Expected Consumer Surplus," *Land Economics*, February, 66(1):50-55.
- Adamowicz, W. L., T. Graham-Tomasi, and J. J. Fletcher. 1989. "Inequality Constrained Estimation of Consumer Surplus," *Canadian Journal of Agricultural Economics*, 37(November):407-420.
- Legg, Thomas D., Jerald J. Fletcher, and K. William Easter. 1989. "Nitrogen Budgets and Economic Efficiency: A Case Study of Southeastern Minnesota," *Journal of Production Agriculture*, 2(2):110-116.
- Adamowicz, Wiktor L., Jerald J. Fletcher, and Theodore Graham-Tomasi. 1989. "Functional Form and the Statistical Properties of Welfare Measures," *American Journal of Agricultural Economics*, May, 71(2):415-421.
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- Fletcher, Jerald J. and Stephen B. Lovejoy. 1988. "Cost Effective Corn and Soybean Production Without Tillage: Fact or Fiction?" *Journal of Farm Managers and Rural Appraisers*, 52(2):7-12.
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- Featherstone, Allen M., Jerald J. Fletcher, and Robert F. Dale. 1988. "Interaction of Weathers and Soils on Corn Yields: Case Study in Wabash County, Indiana, 1983," *Indiana Academy of Sciences*, 97:(477-488).
- Fletcher, Jerald J. and Allen M. Featherstone. 1987. "An Economic Analysis of Tillage and Timeliness Interactions in Corn-Soybean Production," *North Central Journal of Agricultural Economics*, 9(1):207-215.
- Lovejoy, Stephen B. and Jerald J. Fletcher. 1987. "Moldboard Plowing in the Midwest: Changing Use," *The Rural Sociologist*, 7(4):293-298.
- Fletcher, Jerald J. 1986. "Conserving Soil: Economic Insights," *Journal of Soil and Water Conservation*, 41(5):304-305 and 309-310.
- Fletcher, Jerald J. 1985. "Soil Erosion and Land Prices: Discussion," *American Journal of Agricultural Economics*, 67(5):954-956.

Books and Book Chapters

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- Collins, A., R. Rosenberger, and J. Fletcher. 2009. "Valuing the Restoration of Acidic Streams in the Appalachian Region," in *Environmental Economics for Watershed Restoration*, Thurston Hale. W., Matthew T. Heberling, and Alyse Schrecongost (Eds.), CRC Press.
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- Michieka, N. J. J. Fletcher and J. W. Burnett, J.W. 2012. "An Empirical Analysis of the Role of China's Exports on CO₂ Emissions. In: Proceeding of the Southern Regional Science Association, Charlotte, NC.
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- Fletcher, Jerald J. 1995. "Water Quality Problems and Acid Mine Drainage," presented at the 30th Anniversary Conference of the Regional Research Institute, West Virginia University, Morgantown, WV 26505, November 7-8.
- Fletcher, Jerry and Tim Phipps. 1995. "Economic Assessment of the Canaan Valley National Wildlife Refuge," presented at West Virginia University and the Environment:

Celebration of the 25th Anniversary of Earth Day, WVU Law Center, Morgantown, WV, April 21 & 22.

- Fletcher, Jerald J. and Edward J. Spar. 1994. "A New Paradigm for Developing and Using Environmental Information: An Information Science Approach: A Summary," presented at a Free Session of the American Agricultural Economics Association Annual Meeting, San Diego, CA, August 7-10.
- Fletcher, Jerald J. 1994. "A New Paradigm for Developing and Using Environmental Information: An Information Science Approach -- Workshop Overview," presented at a Workshop organized by the Economic Statistics and Information Resources Committee of the American Agricultural Economics Association and the Council of Professional Associations on Federal Statistics, Williamsburg, Virginia, January 24-25.
- Fletcher, Jerald J. 1994. "Economics of Policy Options for Acid Mine Drainage Problems," presented at the Coal Futures Conference, Morgantown, WV, January 15.
- Fletcher, Jerald J. 1993. "An Introduction to the Council of Professional Associations on Federal Statistics," presented in AAEE's Outreach Activities: New Directions, American Agricultural Economics Association Annual Meeting, Orlando, FL, August 1-4.
- Dai, Qi, Jerald J. Fletcher, and Tim T. Phipps. 1993. "Development of a GIS Water Quality Model and Policy Implications," presented at the 32nd Annual Southern Regional Science Association Meeting, Tysons Corner, VA, April 1-4.
- Pyle, Lizbeth A., Jerald J. Fletcher, and Steven A. Whisman. 1992. "The Net Benefits of Streams for Recreation: An Application of the Travel Cost Method in West Virginia," presented at the Forty-Seventh Meeting of the Association of American Geographers, Southeastern Division, Louisville, KY, November 22-24.
- Norton, Nancy Anders, Tim T. Phipps, and Jerald J. Fletcher. 1992. "Nonpoint Pollution Policy: The Role of Voluntary Programs," presented at the Western Economics Association International's 67th Annual Conference, San Francisco, CA, July 9-13, 20 pgs.
- Zaricki, Steven N., Jerald J. Fletcher, and Tim T. Phipps. 1992. "Economic Impact Study of the Proposed Canaan Valley National Wildlife Refuge in Tucker County, West Virginia," presented at the Southern Regional Science Association meetings, Charleston, SC, April.
- Phipps, Tim T., David Zucker, and Jerald J. Fletcher. 1992. "Cost Effect Strategies for Watershed Restoration on Abandoned Minelands," presented at the Southern Regional Science Association Meetings, Charleston, SC, April 3-5.
- Dai, Qi, John G. Lee, and Jerald J. Fletcher. 1991. "Managing Nitrogen Fertilizer Under Different Soil and Weather Conditions," presented at the 1991 Annual Meeting of the American Agricultural Economics Association, Manhattan, KS, August 4-7.
- Fletcher, Jerald J. 1991. "Valuing Environmental Quality in a Regional Framework," invited paper presented at the Regional Restructuring and Regeneration Conference, Centre for Urban and Regional Research, University of Glasgow, Scotland, May.
- Thomas, Kim C. and Jerald J. Fletcher. 1991. "Optimizing Institutional Rules for Managing Farm Drainage Groups," presented at the Public Choice Society meetings, New Orleans. March 16.

- Pyle, Lizbeth A., Jerald J. Fletcher, Steven A. Whisman, and Jeffrey Morris. 1990. "An Economic Valuation of Stream-Based Recreation in West Virginia's Cheat River Basin," presented at the Sixth Annual Scientific Symposium of The Ohio River Basin Consortium for Research and Education, Morgantown, WV, December 2-4.
- Dai, Qi and Jerald J. Fletcher. 1989. "Estimating the Distribution of the Weather Factor in Crop Production," presented at the Annual Meeting of the Southern Agricultural Economics Association, Nashville, TN, February 5-8, 17 pages.
- Fletcher, Jerald J., Theodore Graham-Tomasi, and Wiktor L. Adamowicz. 1988. "An Overview of Travel Cost Models: Problems and Potential Improvements," presented at the Western Regional Research Project W-133 meeting, Homer, AK, July 18-19, 16 pages.
- Fletcher, Jerald J. 1988. "A Time Series Surrogate for a Bioeconomic Model," presented at the Annual Meetings of the Society for Economic Dynamics and Control, Tempe, AZ, March 9-11, 15 pages.
- Thomas, Kim C. and Jerald J. Fletcher. 1988. "An Optimal Control Model of Dynamic Externalities from Soil Erosion," presented at the Annual Meetings of the Society for Economic Dynamics and Control, Tempe, AZ, March 9-11, 13 pages.
- Fletcher, Jerald J., William J. Van Beek, and David B. Mengel. 1987. "GUFERT: An Expert System for Nitrogen Fertilizer Recommendations for Corn," presented as part of "Maintaining the Cutting Edge," American Agricultural Economics Association Extension Workshop, East Lansing, MI, July 31-August 1.
- Thomas, Kim C. and Jerald J. Fletcher. 1986. "Extra-Market Transactions and Externalities: The Effects of Drainage Agreements on Off-Site Costs from Soil Erosion," presented at the Association of Environmental and Resource Economists sessions of the American Economic Association Meeting, New Orleans, December, 11 pages.
- Fletcher, Jerald J. and Stephen B. Lovejoy. 1986. "Off-Farm Costs of Sediment from Agricultural Lands," Paper No. 86-2623 presented at the American Society of Agricultural Engineers Meetings, Chicago, December, 8 pages.
- Romand-Heuyer, P. and J. J. Fletcher. 1986. "Tentative d'évaluation des conséquences économiques à long terme de l'érosion des sols agricoles aux Etats-Unis," (A preliminary Analysis of the Long Term Economic Consequences of Soil Erosion in the United States), presented at 19th Hydraulics Workshop of the Societe Hydrotechnique de France, Paris, France, September 9-11, 6 pages.
- Patrick, Robert H., Jerald J. Fletcher, and Edna E. Loehman. 1986. "Estimating Water Quality Effects on Recreational Value," presented at the Eastern Economic Association Meetings, Philadelphia, PA, April 10-12, 14 pages.
- Fletcher, Jerald J. and Stephen B. Lovejoy. 1984. "Trends in Tillage for Midwestern Corn Production," presented at 39th Annual Meeting of Soil Conservation Society of America, Oklahoma City, OK, July 29-August 1, 8 pages.
- Lovejoy, Stephen B. and Jerald J. Fletcher. 1984. "Trends in Tillage," presented at the Rural Sociology Section of the 1984 Southern Association of Agricultural Scientists Meeting, Nashville, Tennessee, February 5-8, 4 pages.

Rinehart, Edgar A. and Jerald J. Fletcher. 1969. "Determination of Sulfur Dioxide in Polluted Air by MRR Spectroscopy," paper presented at joint meeting of The Society for Applied Spectroscopy and the Western Meetings of the American Chemical Society, Anaheim, California, October, 5 pages.

Poster Presentations and Poster Papers

Michieka, Nyakundi, Jerald Fletcher and Donald Lacombe. 2012. "The Cost of Energy – The Environmental Effects of Coal Production in China," Selected poster presented at the Annual Meetings of the Agricultural and Applied Economics Association, Seattle, WA, Aug. 12-14.

Eli, Robert N., Jerald J. Fletcher, Thomas A. Galya, Michael P. Strager, Samuel J. Lamont, Qingyun Sun, Elena V. Hoeg and John B. Churchill. 2005. "Cumulative Hydrologic Impact Assessment of West Virginia Coal Mine Permits Using HSPF and WCMS," Poster presented at the ASCE-EWRI 2005 Watershed Management Conference, Williamsburg, VA, July 19-22.

Sun, Qingyun and Jerald J. Fletcher. 2004. "Coal to Oil: Shenhua Coal Liquefaction Projects," Poster presentation with paper at the Twenty-First Annual International Pittsburgh Coal Conference, Osaka, Japan, Sep. 13-16.

Sun, Qingyun and Jerald J. Fletcher. 2003. "A Comparative Analysis of Costs of Alternative Coal Liquefaction Processes," Poster presentation with paper presented at the Clean Coal and Power Conference in conjunction with The Second Joint U.S. – People's Republic of China Conference on Clean Energy, Washington, DC, Nov 17-19.

Sun, Qingyun and Jerald J. Fletcher. 2003. "US-China Joint Research Project: Economic and Environmental Impacts of Implementing Coal Liquefaction in China," Poster presentation with paper presented at the Pittsburgh Coal Conference, September 15-19.

Fletcher, Jerald J. and Michael P. Strager. 2000. Natural Resource Analysis Center Poster presentation at WV Legislature Agriculture Day, Charleston, WV, February 2.

Strager M. P., Fletcher J. J., and C.B. Yuill. 1997. "Hydrological Modeling of Acid Mine Drainage in the Cheat River Watershed," Annual Acid Mine Drainage Conference, Pittsburgh, PA, October 17-19.

Rowe, Jacquelyn M., Charles B. Yuill, and Jerald J. Fletcher. 1996. "The Canaan Valley Geographic Information System," Poster presented at the 1996 West Virginia GIS Forum and Exhibition, Charleston, WV, October 22-23.

Strager, Michael P., Qi Dai, Jerald J. Fletcher, Tim T. Phipps, and Charles B. Yuill. 1995. "Water Quality Modeling for Economic and Policy Analysis: An Application in the Sovern Run Watershed," Poster presented at the Annual Meeting of the American Agricultural Economics Association, Indianapolis, IN, August, abstract published American Journal of Agricultural Economics, December, 77(5):1392.

Fletcher, J., T. Phipps, C. Yuill, Q. Dai, and M. Strager. 1995. "A Water Quality Modeling System in Aid in Reclamation Decisions: An Application in the Sovern Run Watershed," Poster presented at West Virginia University and the Environment: Celebration of the 25th Anniversary of Earth Day, WVU Law Center, Morgantown, WV, April 21&22.

Papers Presented to Government Agencies, Universities and Trade Associations

- Fletcher, Jerald J. 2001. *Open Meeting on Growth, Development, and Land Use*, Organized and chaired meeting at Shepherd College (organized in conjunction with Shepherd College and WVU faculty members) presented to about 200 local citizens, January 26.
- Fletcher, Jerald J. 2001, "An Interdisciplinary Approach to Watershed Analysis: An Economist's Perspective," presented at the University of Minnesota Seminar Series, St. Paul, MN to economists and others interested in watershed management issues, January 19.
- Fletcher, Jerald J. 1999. "Watershed Characterization and Modeling System Capabilities," Pennsylvania Department of Environmental Protection, Harrisburg, PA, June.
- Fletcher, Jerald J. 1999. "NRAC Projects and Capabilities," Presentation to Carolyn Adams, NRCS Watershed Science Institute, April.
- Klocek, Chris and Jerald J. Fletcher. 1997. "An Overview of Canaan Valley Study," Presented at the annual meeting of the WVU Fish and Wildlife Cooperative Unit, Audience: committee members and guests, March.
- Fletcher, Jerald J. 1996. "Introduction to Non-market Valuation for Environmental Management," seminar presented to academics and government officials at Tallinn Technical University, Tallinn, Estonia, September 5.
- Fletcher, Jerald J. 1996. "Acid Mine Drainage Research in CAF with GIS," presentation to the Mid-Atlantic Highlands Coordinating Council, Morgantown, WV.
- Fletcher, Jerald J. 1993. "An Introduction to the ARC/INFO Water Quality Modeling System (WQMS)," presented at a workshop organized by the Natural Resource Analysis Center, Division of Resource Management, West Virginia University, Morgantown, WV, October 28.
- Fletcher, Jerald J. 1993. "Using a Geographical Information System for Stream Quality Evaluation," presented at a workshop organized by the Division of Environmental Protection for the Special Reclamation/Bond Forfeiture Report, Flatwoods, WV, September 14.
- Fletcher, Jerald J. 1992. "An Introduction to LIMDEP, an Econometrics Package," WVNET User Conference '92, Morgantown, WV, November 18-20.
- Pyle, Lizbeth A. and Jerald J. Fletcher. 1992. "Issues in Recreation Management for the Cheat River System," Regional Research Institute Seminar Series, West Virginia University, Morgantown, WV, May 2.
- Fletcher, Jerald J. 1991. "Spatial Data Needs for Environmental Policy Analysis," panel discussion presented at the Regional Research Institute 25th Anniversary Conference, Morgantown, WV, October 19-20.
- Fletcher, Jerald J. 1990. "Expert Systems: A Catalyst for Interdisciplinary Research," J. Fletcher. Agronomy Seminar, West Virginia University, February 12.

- Fletcher, Jerald J. 1989. "Development of a National Data Base of Fertilizer Sales in the United States," seminar presented to the Seminar Series, Office of Policy Analysis, US Environmental Protection Agency, Washington, DC, January 18.
- Fletcher, Jerald J. 1988. "Value of Improving Water Quality," seminar presented in the National Soil Erosion Research Laboratory Seminar Series, West Lafayette, IN, November 21.
- Fletcher, Jerald J. 1988. "Valuing Improvements to Water Quality for Recreational Fishermen," seminar presented for the Division of Resource Management, West Virginia University, Morgantown, WV, September 8.
- Fletcher, Jerald J. 1988. "Functional Form and the Statistical Properties of Welfare Measures: Observations and Implications for Further Research," seminar presented for the faculty of the Department of Economics, University of Alaska, Fairbanks, AK, May 13.
- Fletcher, Jerald J. 1988. "N-MAN," paper presented at 2nd International Conference on Computers in Agricultural Extension Programs, Lake Buena Vista, Florida, February 9-11.
- Fletcher, Jerald J. 1988. "Nitrogen Management Expert System," comments presented at the Hatch Act Centennial Seminar on Artificial Intelligence & Expert Systems Technology for Agriculture, School of Agriculture, Purdue University, West Lafayette, IN, January 13.
- Fletcher, Jerald J. 1987. "N-MAN," The University-Industry Conference on Agricultural Expert Systems, The Midwest Technology Development Institute, Bloomington, MN, October 19-20.
- Fletcher, Jerald J. and Stephen B. Lovejoy. 1986. "Recreational Fishing Benefits of Reduced Sediment Loads: Indiana Estimates of Off-site Effects of Erosion," National Headquarters Seminar, Soil Conservation Service-USDA, Washington, DC, November 13.
- Fletcher, Jerald J. 1986. "The Offsite Impacts of Reducing Sedimentation in Waterways," Externalities Section Seminar, Resource and Technology Division, ERS-USDA, Washington, DC, November 12.
- Fletcher, Jerald J. 1986. "Expert Systems for Nitrogen Recommendations for Corn," National Fertilizer Development Center, Tennessee Valley Authority, Muscle Shoals, AL, June 19.
- Fletcher, Jerald J. 1986. "Soil Conservation: An Economic Perspective," paper presented to Congressional Staff, USDA Staff, and Media, at USDA-ERS, Washington, DC, March 26.
- Fletcher, Jerald J., Ted L. Napier, and Stephen B. Lovejoy. 1986. "Conserving Soil: Insights from Socioeconomic Research," presented at seminar sponsored by Resources for the Future, the Soil Conservation Society of America, the Economic Research Service of the U.S. Department of Agriculture (ERS-USDA), and the Soil Conservation Service of the U.S. Department of Agriculture, Washington, DC, March 26.
- Fletcher, Jerald J. 1985. "Implications of Reduced Tillage for the Fertilizer Industry," Agricultural Chemical Dealers Seminar Program, National Fertilizer Development Center, Tennessee Valley Authority, Muscle Shoals, AL, April 25.

Fletcher, Jerald J. 1985. "Conservation Tillage: The Midwest Picture," Canadian Industries Ltd. (C-I-L) Blender Seminar, London, Ontario, Canada, March 15.

Fletcher, Jerald J. 1984. "Changing Agricultural Production Systems and the Fate of Agricultural Chemicals," Agricultural Research Institute Conference, National 4-H Center, Chevy Chase, MD, February 21-23.

Fletcher, Jerald J. 1983. "Impact of Tillage Practices on Fertilization -- A Survey Status Report," Indiana Plant Food and Agricultural Chemicals Conference, Purdue University, West Lafayette, IN, December 13-14.

Invited Presentations

Fletcher, Jerald J., 2012. "US-China Clean Coal Program." Invited presentation for the Energy and Environment Panel: Towards a Sustainable Future, Carnegie Mellon University Summit of US-China Innovation and Entrepreneurship, Pittsburgh, PA, April 29.

Fletcher, Jerry. 2011. "Nexus," invited presentation to *TEDx Pittsburgh: Power*, Nemaquin, Farmington, PA, Nov. 19.

Fletcher, Jerald J. 2011. "Coal Mining: Water Resource Implications," invited presentation to the Atlantic Council, *Energy Water Nexus: Primary Fuels for Power and Transportation in the US*, Washington, DC, Nov. 10.

Fletcher, Jerald J. 2011. "US-China Clean Coal Program," invited presentation at the 2011 Annual Program Conference of the Council of Energy Research & Education Leaders (CEREL), Canonsburg, PA and Morgantown, WV, Nov. 7-9.

Fletcher, Jerald J. 2011. "US-China Cooperation in Clean Coal and Carbon Capture, Utilization and Storage," invited presentation at *China FAQs: Climate and Energy Information Network Meeting*, World Resources Institute, Washington, DC, Oct. 6.

Fletcher, Jerald J. 2011. "Opportunities and Mechanisms for Innovation and Transformational Development," invited presentation at the *Forum of Comprehensive Transformation Reform Practices for Resource-Oriented Economy under the Sixth Central China Expo*, Taiyuan, Shanxi Province, China, Sep. 26.

Fletcher, Jerald J. 2011. "Coal-Based Options for Energy Generation: Strategies for the Next 30 Years," invited presentation at the *Developing Global Sustainability – China/U.S. Partnerships*, University of Michigan, Ann Arbor, MI, May 20.

Fletcher, Jerald J. 2011. "Overview of the US-China Energy Center Advanced Coal Technology Consortium," invited presentation at the *Tenth Annual Carbon Capture & Sequestration Conference*, Pittsburgh, PA, May 5.

Fletcher, Jerald J. 2011. "US-China Energy Center: Activities and Programs," invited presentation at the *WVU Symposium Science & Technology in Society: Effective Communication Strategies*, Morgantown, April 5.

Fletcher, J. J., 2004. The Watershed Characterization and Modeling System (WCMS): Support Tools for Large Watershed CHIA and NPDES Analyses. (see also under *Proceedings of the Advanced Integration of Geospatial Technologies in Mining and Reclamation*, Atlanta, GA, Dec 7-9, 2004).

- Fletcher, Jerald J. and Tim T. Phipps. 2004. "Comparative Analysis of Water Quality Standards in WV and Surrounding States," Invited presentation to the Legislative Rule Making Review Select Committee D - Water Resources Protection October Interim Meetings, Shepherdstown, WV, Oct. 10.
- Fletcher, Jerald J. 2004. "Comparative Economic Analysis of Selected WQ Standards and Implementation Practices in WV and Surrounding States," Invited presentation to the West Virginia Manufacturers Association Environmental Safety and Security Conference, Charleston, WV to WVMA members and other attendees, Sep. 28.
- Fletcher, Jerald J. 2004. "The Watershed Characterization and Modeling System (WCMS)." Invited presentation to the U.S. Department of the Interior, Office of Surface Mining TIPS Coordinating Meeting, Estes Park, CO to OSM staff from through the US. July 28.
- Dougherty, M., J. Strager, J. Fletcher, and K. Martin. 2004. Integration of Geographic Information Systems in WVU Extension Service programming and outreach. Invited presentation at GIS in the Appalachians, Morgantown, WV, May 10.
- Fletcher, Jerald J. 2003. "Economic Insights into TMDL's and Water Quality Trading." presentation to the Pittsburgh Section of the American Society of Civil Engineers Environmental Water Resources Institute, Warrendale, PA, November 7.
- Fletcher, Jerald J. 2003. "Cost Benefit Analysis of River Gages: Where Do We Go from Here?" presented at the West Virginia River Gage Workshop, Charleston, WV, Feb. 19-20.
- Fletcher, Jerald J. and Randall S. Rosenberger. 2002. "Land Use Initiatives at West Virginia University," presented at the Land Use Conference, Orlando, FL, Feb. 21-22.
- Fletcher, Jerald J. 2001. "Getting into Geographical Information Systems (GIS) on the Cheap, or What Has Technology Done for Us Lately?" presented at the annual meeting of the West Virginia Economic Development Council, Morgantown, WV, September 30-October 2 to economic development specialists and others in West Virginia, October 2.
- Fletcher, Jerald J. 2001. Presentation to the Interim Committee on Agriculture and Agribusiness related to GIS and Land Use issues in West Virginia to WV Legislative committee members, September 17.
- Fletcher, Jerald J. 2001. "Research Support for Community Service," presented at the National meeting of the National Association of Planning Councils, Charleston, WV to professional planners, April 6.
- Fletcher, Jerald J. 2001. "NRAC Capabilities: An Overview," Invited presentation to WVU Cooperative Extension administrators, March 1.
- Fletcher, Jerald J. 2000. "Watershed Planning – GIS Applications," Invited presented at the Abandoned Mine Land Remediation Workshop, U.S. Army Corps of Engineers, St. Louis, MO, November 14-16.
- Fletcher, Jerald J. 2000. "Economic Values of Clean Water," presented at the 60 Anniversary Celebration and Annual Meeting of the Interstate Commission on the Potomac River Basin, Water Resources in the New Century, Shepherdstown, WV. Board, members of ICPRB, and other attendees September 25.

- Strager, M.P., J.J. Fletcher, J.M. Rowe, and C.B. Yuill. 1999. "Watershed Characterization and Modeling Results in the Kiski-Connemaugh River Basin," Pennsylvania Environmental Council AMD/AML Conference, State College, PA, June 19.
- Strager, Michael P. and Jerald J. Fletcher. 1999. "Overview of the Watershed and Characterization Modeling System and Options for GIS Development," Nitro, WV, to WVDEP Staff and Administrators, February.
- Fletcher, Jerald J. 1997. "Perspectives on the Integration of the Census of Agriculture with NASS," Invited keynote address to the National Agricultural Statistics Service Managers' Workshop, Louisville, KY, Audience: State Statisticians and other NASS staff, April.

Miscellaneous

- Peer Review of the Watershed Analysis Risk Management Framework (WARMF). 2000. EPRI, Palo Alto, CA: Report TR-043752 (member of review panel).
- Jenkins, M.R., E.M. Wade, J.J. Fletcher, and J.A. Hankins. 1995. "Economic Analysis of Non-Traditional Water Resources for Aquaculture in West Virginia," The Conservation Fund's Freshwater Institute, PO Box 1746, Shepherdstown, WV 25443, July.
- Fletcher, Jerald J. 1982. "Management of Multiple Resources with Heterogeneous Capital: The Case of the Eureka Crab Fishery," unpublished Ph.D. Dissertation, Department of Agricultural Economics, University of California, Davis, CA.
- Fletcher, Jerald J. 1980. "An Economic Analysis of a Regulated Multiple Purpose Fishing Fleet: An Application to the Northern California Crab, Salmon, and Albacore Fisheries," Unpublished research prospectus, Department of Agricultural Economics, University of California, Davis, CA, March.

Software Documentation

- Strager, Michael P. and Jerald J. Fletcher. 2001. *Watershed Characterization and Modeling System Version 2.8 Users Manual*, Natural Resource Analysis Center, West Virginia University, Morgantown, WV 26508, April.
- Strager, Michael P. and Jerald J. Fletcher. 2000. *Watershed Characterization and Modeling System Version 2.5 Users Manual*, Natural Resource Analysis Center, West Virginia University, Morgantown, WV 26508, June.

Jerald J. Fletcher

Summary of Grants, Contracts, and Other Financial Resources Obtained

Note: Abbreviations defined in table notes at end, Project Budget refers to project total budget including any cost share provided, External Funds is the amount of funds from sources external to the University, Fletcher/NRAC indicates the funds that directly supported Fletcher’s research program and/or the Natural Resource Analysis Center. NRAC project is the internal NRAC project number where applicable. Fletcher is PI for all projects unless otherwise noted in the Project Title and Collaborators column. All external funding is credited to West Virginia University unless stated otherwise.

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/NRAC	NRAC Project	Project Title and Collaborators
2015	10/15-9/17	USDA/NRCS	\$700,000	\$350,000	\$392,942	437	DC-NRCS Coop Agreement
2014	8/18-11/15	USDOE/NETL	\$25,001	\$25,001	\$25,001	USCEC	Support for 4th US-China 110 Symposium on CO2 Emission Control Science and Technology
2014 2015	9/1 8/31	USGS	\$50,000	\$50,000	\$50,000	425	Stream Stats (Sam Lamont) Extension and Increase
2013	4-10	Williams	\$186,465	\$186,465	\$186,465	424	LiDAR Acquisition and Processing (Paul Kinder, Adam Riley)
2013 2014	10/1-9/30	USGS	\$25,000	\$25,000	\$25,000	425	Stream Stats (Sam Lamont)
2013	3-6	WVDEP	\$32,745	\$32,745	32,745	422	Hydro Analysis (Sam Lamont)
2012	9/12-2/13	GI	25,000	25,000	25,000	417	Full Scale Energy Team (PI-Kinder)
2012	8/12-7/14	NSF	335,930	335,930	113,187	419	The Technology, Energy, Economy, and Environment (TEEE) Chain (PI-Ghadimi, Co-Jackson, Fletcher, Burnett)
2012	8/12-12/16	USDA/FS	51,506	27,434	27,434	*418	Examining Spatial Patterns of Fire Severity and Impacts to Ephemeral and Intermittent Streams after Prescribed Fire (PI-M. Strager)
2012	7/12-6/13	WVDEP	120,000	120,000	120,000	411	WCMS Support for Development, Maintenance, and Training for FY 2012-2013 (Co-Lamont)
2012	6/12-6/14	USDA/FS	41,104	21,991	12,418	416	Golden-Winged Warbler Habitat Modeling Using LiDAR (PI-P. Wood Co-Kinder)
2012	4/12-6/13	WV DNR	56,788	38,370	38,370	*415	West Virginia Wetland Inventory and Modeling Project Phase III (PI-M. Strager)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2012	4/12 - 12/12	OPB	44,215	44,215	44,215	413	High Resolution Airborne and Terrestrial Surveying Support for Oregon Public Broadcasting Time Team America
2012	3/12 - 2/14	USDOE/ NETL	281,490	225,000	81,995	USCEC	U.S. China Carbon Capture and 102 Storage Development Project at West Virginia University (Co-Carr)
2012	2/12 - 9/12	UMCES	19,663	19,663	19,663	401	High Resolution LiDAR Data for Dyke Marsh Wildlife Preserve, Virginia (Co-Kinder)
2011	7/11 - 6/12	WVDEP	120,000	120,000	120,000	404	WCMS Support of Development, Maintenance and Training for FY 2012 (Co-Lamont)
2011	4/11 - 12/11	CVI	24,000	24,000	24,000	402	High Resolution LiDAR Data for WE38 Watershed, Northumberland County, PA (Co-Kinder)
2010	10/10 - 9/15	USDOE	26,000,060	24,050,060	1,950,000	USCEC	US-China Advanced Coal 101 Technology Consortium (Co-Bajura, Carr, Celik, Sun, Turton)
2010	10/10 - 12/12	ECA	180,192	135,000	57,090	395	Project for Energy Company of America (ECA), Webster County, WV & Greene County, PA (PI-Carr, Co-Toro, Gao, Kinder)
2010	9/10 - 6/11	WVDEP	100,000	100,000	100,000	392	WCMS Support of Development, Maintenance and Training for FY 2011
2010	8/10 - 12/10	FDC	12,964	12,964	12,964	394	High Resolution LiDAR Data for Friends of Deckers Creek (Co-Kinder)
2010	7/10 - 12/10	UMCES	47,210	47,210	47,210	390	High Resolution LiDAR Data for Harpers Ferry and Catoctin Mountain Park (Co-Kinder)
2010	4/10 - 6/11	WV DHHR	93,247	93,247	93,247	366	Development of a Zone of Critical Concern Decisions Support System for WV (PI-M. Strager)
2010	1/10- 11/13	URS	73,000	73,000	73,000	n/a	URS Letter Subcontract - multiple PI's, Multiple tasks
2009	12/09 -6/13	WVDEP	1,000,000	1,000,000	1,000,000	388	LiDAR Acquisition for WV Coal Fields-Phase I & II (Co-Kinder)
2009	10/09 - 9/13	WV DNR	2,062,000	2,062,000	1,975,627	387	Program and Research Support for West Virginia Division of Natural Resources Stream Restoration and Habitat Enhancement Program (Co-Kinder, Yuill)
2009	8/09 - 9/10	USDA/ NRCS	50,000	50,000	50,000	385	Value of Economic Benefits of the National Cooperative Soil Survey Program (CESU)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2009	8/09 - 7/12	USDC/ NOAA	1,705,250	1,705,250	1,000	386	Development of an Environmental Center of Excellence for the Mid-Atlantic Highlands (PI-Anderson, Co-Petty, Bissonnette, S. Selin, Devallance, McDonald, Sextone, Collins, Kyber)
2009	5/09 - 9/13	USDA/ FS	185,021	138,557	138,557	380	CALPUFF Deposition Modeling and Spatial Data Analysis (Co-J. Strager)
2009	3/09-	AESC	25,000	25,000	25,000	*384	An Inventory and Recreational Analysis for Cheat Lake, WV (PI-M. Strager, Co-Pierskalla)
2009	1/09 - 6/12	NFWF	1,300,000	650,000	4,310	362	Cacapon River Watershed Stream and Riparian Restoration Collaborative(PI-Anderson, Co-Welsh, Grafton, Lin, Park)
2008	11/08 - 6/10	WVDEP	125,000	125,000	125,000	360	WCMS Development and Training for FY 2009 (Co-J. Strager, M. Strager)
2008	10/08 - 12/12	USEPA	457,707	457,707	49,389	412	BF 09-Sustainable Energy Parks on Mine Scarred Land (PI-Ziemkiewicz Co-Kirby, J. Strager, P. Butler)
2008	9/08 - 9/09	CESU USDA	44,000	44,000	44,000	371	Remote Sensing Support for NCSS Soil Mapping Methods (Yuill, M. Strager)
2008	8/08- 9/09	USDA/ NRCS	28,819	28,819	28,819	334	Economic Benefits of the National Cooperative Soil Survey program
2008	7/08 - 9/09	USDA/ NRCS	10,000	10,000	10,000	*354	Determining the Scale Dependency of Soil Quality Indicators and Specific EPIC Output Parameters for Selection BMP's Using Field and Map Information- Objective I-Area of Concern (PI-M. Strager)
2008	7/08- 6/09	CESU USDA	50,000	50,000	50,000	370	Value of Economic Benefits of NCSS Program
2008	7/08- 9/09	NRCS	22,784	22,784	22,784	344	Decision Support System for Sage Grouse Management (PI-M. Strager)
2008	5/08- 12/10	WVDO	47,182	47,182	47,182	361	Support of Economic Development Related to Energy and China (Sun)
2008	4/08- 1/10	USDOE/ NETL (RDS)	486,360	486,360	340,946	356	Modeling Impacts of Produced Water from CBNG E&P Activities (R. Eli, M. Strager, C. Yuill)
2007	9/07 - 9/10	USDA/ FS	175,000	100,000	100,000	353	Using GIS Technology to Identify and Rank the Risk and Susceptibility of Sites in the Mid-Atlantic Area to the Emerald Ash Borer (PI-M. Strager, Co-McNeel, J. Strager)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2007	9/07 - 3/09	USDOJ/ OSM	133,485	99,992	69,951	333	Development of a WCMS-HSPF Regional Groundwater Recharge Model for Underground Mine Hydrologic Assessment (Eli, M. Strager)
2007	9/07 - 9/08	USGS	50,000	50,000	25,000	*359	2007-08 Development of a Local Resolution National Hydrography Dataset (NHD) Steam Network in WV for Assessing Water Quality and Biota Events (CESU) (PI-K. Donaldson, Co-J. Strager)
2007	8/07 - 5/08	USGS	11,321	11,321	11,321	355	Diamond Darter Status Review and Recovery Effort Assistance (PI-J. Strager, Co-Welsh)
2007	8/07- 9/10	USFS	96,590	66,000	66,000	351	Spray Advisor System Development (J. Strager)
2007	6/07 - 1/10	USDOE/ NETL (RDS)	328,606	328,606	113,697	349	CO2 Sequestration Risk Assessment (Sperow)
2007	6/07	WVDNR	123,230	84,000	34,000	346	West Virginia Wetland Inventory and Modeling Project-Phase I&II (PI-Mazik, M. Strager, Co-J. Strager)
2007	6/07- 12/07	WVDEP	50,000	50,000	50,000	335	WCMS Low Flow Calculations Update (Co-M. Strager)
2006	10/06 - 9/09	USDA/ NRCS (NGDC)	135,000	135,000	135,000	332	Economic Benefits of the National Cooperative Soil Survey Program.
2006	9/06 - 6/07	WVDEP	100,000	100,000	100,000	339	WCMS Development, Maintenance and Training for FY 2007
2006	9/06 - 5/09	USGS	169,450	169,450	50,225	352	Development of a Habitat Restoration and Conservation Prioritization Tool for Songbirds and Mussels in the Appalachian Mountains (PI-Wood, Co-M. Strager, Mazik)
2006	8/06 - 12/13	USDOE/ NETL	4,264,482	3,420,721	1,316,665	340	Long Term Environmental and Economic Impacts of Coal Liquefaction in China (Bajura, Sun)
2006	2/06 - 1/08	WV SAMB	206,100	206,100	27,500	338	FY06 WVSAMB Evaluation and Hydrography Value-Added Products (PI-K. Donaldson, Co-Elmes, Harris)
2006	3/06 - 6/06	WVDEP	100,000	100,000	100,000	320	Estimating Ambient Water Quality in AMD Impacted Watersheds and WCMS Updates/Training

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2005	3/05 - 3/06	USGS	17,120	12,872	12,872	312	Fine-Scale Forest Bird Habitat Modeling (J. Strager, M. Strager, Wood-PI)
2005	2/05 - 7/05	USDOE/ NETL	42,499	42,499	8,881	318	Produced Water Management Costs - Contemporary Estimates (Ziemkiewicz - PI, Yuill)
2005	2/05 - 1/07	USEPA	599,638	599,638	47,268	304	A Hierarchical Classification System for Identifying Restoration Priorities and Impact Vulnerability in Mined Watersheds of the Mid-Atlantic Highlands (Ziemkiewicz, Petty, Stiles)
2004	1/04- 12/04	Fees	69,200	69,200	69,200	n/a	ArcGIS Training, direct invoice for services, transfers from other units
2004	12/04 - 2/05	WVDA	25,935	19,500	19,500	309	Identification of Spatial-Temporal Trends in Fecal and Nutrient Concentrations in the Potomac Watershed of West Virginia, 1998-2004 (Cromwell)
2004	12/04 - 7/06	USDOE/ NETL	232,500	232,500	229,509	301	Long Term Environmental and Economic Impacts of Coal Liquefaction in China (Bajura, Sun)
2004	11/04 - 6/05	WVDEP	126,350	95,000	95,000	305	Enhancing Water Resource GIS Datasets for WV (J. Strager)
2004	10/04	USDOJ/ OSM	3,000	3,000	3,000	316	WCMS training
2004	5/04 - 6/09	USDA/ NRCS	82,185	82,185	47,904	341	National Geospatial Development Center (PI-F. King, Co-M. Strager, Pena-Yewtukhiw, Logar)
2004	4/04 - 12/05	WHC	32,000	32,000	32,000	303	Invasive Plants in the Kiski Conemaugh River Watershed (M. Strager, Yuill)
2003	10/03 - 9/05	USDOJ/ NPS	34,975	26,298	26,298	300	Development of Fire History Spatial Data Layers
2003	10/03 - 9/05	USDA/ FS	73,000	50,000	50,000	281	Adaptation of User Interface to ArcView Gypsies (Spray Advisor ArcGIS 8) (J. Strager)
2003	9/03 - 11/04	USDOE/ NETL	175,533	175,533	170,719	301	Long Term Environmental and Economic Impacts Coal Liquefaction in China (Bajura, Sun)
2003	9/03-	WVURC	250,000	10,828	10,828	284	PSIR APERC Program to Stimulate Interdisciplinary Research - Advanced Power Engineering Research Center (Feliachi – PI)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2003	8/03 - 12/06	USDOJ/ USGS	51,100	38,421	27,201	302	Wetland Vegetation Monitoring Study Along the Conemaugh River/Reservoir (Fortney - PI, Yuill, M. Strager, Rentch)
2003	7/03 - 9/07	USDOE	2,250,000	2,250,000	152,888	283	EPSCoR State Implementation Plan -Integrated Computing, Communication and Distributed Control of Deregulated Electric Power Systems. (Feliachi, Project Leader, et al.)
2003	1/03- 12/03	Fees	9,395	9,395	9,395	n/a	ArcGIS Training
2003	1/03 - 12/03	WVDEP	92,909	70,000	70,000	282	Supporting Economic Development with Brownfields Resources: A Web Baded Geographic Information System Approach (Co-Saymansky)
2002	2002	WVURC	450	450	450	n/a	Faculty International Travel Grant
2002	2002	NE RCRD	575	575	575	n/a	NERCRD Travel Grant
2002	10/02 - 9/04	USDA/ FS	33,580	23,000	23,000	280	Adaptation of User Interface to ArcView Gypses (Spray Advisor) (J. Strager, Yuill)
2002	10/02 - 10/05	WVDOH	251,726	33,000	33,000	279	Wetland and Stream Mitigation Program Feasibility Study (Fortnery, M. Strager, Anderson, Petty, Kite)
2002	10/02 -9/03	NEETC	565,337	59,769	59,769	277	WVU NEETC Center of Excellence Workplan (Saymansky)
2002	9/02- 4/04	MTU	35,000	35,000	12,052	274	Recycling and Reuse of Steel Mill Byproducts (Ziemkiewicz-PI)
2002	9/02 - 7/05	USDOJ/ GS	66,500	50,000	50,000	278	Development of a Regional Wildlife Habitat Database and GIS (Yuill, J. Strager)
2002	7/02 - 6/03	WVDEP	93,100	70,000	70,000	282	Supporting Economic Development with Brownfield Resources: A Web Based GIS Approach (Saymansky)
2002	7/02- 6/06	WVUES	78,840	54,000	54,000	276	GIS Support for WVUES
2002	4/02 - 7/03	CVI	14,630	11,000	11,000	270	Parcel Prioritization for the Cacapon Watershed (M. Strager, Rosenberger)
2002	4/02- 8/02	MDDE	10,499	10,499	10,499	266	Western Maryland WCMS Extension
2002	3/02- 7/02	WVDEP	92,169	69,300	69,300	256	High Resolution NHD Development (J. Strager)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2002	1/02	NRAC	10,000	10,000	10,000	254	Economics, Policy, and Trade: Implications for the Chinese Coal Industry
2001	2001	Varies	20,000	20,000	20,000	n/a	GIS Training and Support activities – general NRAC revenue invoiced
2001	10/01-9/02	NEETC	237,000	20,219	20,219	273	Cascade General Proof of Concept
2001	10/01-9/02	USDA/ FS	33,580	23,000	23,000	248	Adaption of User Interface to ArcView Gypsies (Yuill, J. Strager)
2001	10/01-6/05	WVDEP	1,582,196	1,197,469	1,016,641	244	GIS Tools for CHIA Analysis
2001	10/01-3/03	USDA/ FS	33,580	23,000	23,000	248	Adaptation of User Interface to ArcView Gypsies
2001	9/01-9/02	USDA/ FS	142,160	97,370	97,370	250	NHD Development for the Monongahela National Forest (J. Strager, Yuill)
2001	9/01-8/04	USDA/ NRI	88,314	74,938	11,898	240	Economic Valuation of Stream Restoration (Collins, PI, and Rosenberger)
2001	8/01-8/02	CVI	29,260	22,000	22,000	231	GIS Support and Modeling Consultation (Year 2)
2001	8/01-9/02	WVDTR	7,581	5,700	5,700	228	Valuation of Timberland (Yuill-PI)
2001	1/01-6/02	WVURC	20,000	20,000	20,000	252	Large Scale Scanner Support for Natural Resource and Environmental Management (Yuill)
2000	1/01-6/01	NRCCE	7,850	650	6,500	238	Climate Change for West Virginia
2000	2000	Varies	25,000	25,000	25,000	n/a	GIS Training and Support activities
2000	12/00-12/01	USA/ WVNG	48,431	36,414	36,414	230	NRAC 2000-08 – GIS Technical Support for Camp Dawson
2000	12/00-12/01	CVI	106,400	80,000	80,000	224	CVI - Landscape Assessment Tools
2000	10/00-10/04	PITG	664,598	546,326	106,274	236	Phase II - Abandoned Mine Pool Flooding of the Pittsburgh, Ohio, and Irwin Basins (PI-Ziemkiewicz, Co-Donovan)
2000	9/00-7/02	MDBM	35,000	35,000	35,000	266	AML and Watershed Modeling System (M. Strager)
2000	9/00-9/02	USDA/ FS	36,493	24,995	24,995	220	Adaption of User Interface to ArcView Gypsies (Yuill, J. Strager)
2000	8/00-9/02	CVI	29,260	22,000	22,000	231	GIS Support and Modeling Consultation (Yr 1)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
2000	5/00 - 9/00	WVAES	13,903	13,903	13,903	n/a	Development of an Optimization Framework for Analyzing and Developing Watershed Management Plans (Phipps)
2000	4/00- 12/01	WVDEP	134,075	101,015	44,502	218	WRI 24 Enhanced Decision Support for TMDL's (Ziemkiewicz PI)
2000	3/00	NRCCE	1,600	1,600	1,600	n/a	Advanced Concepts for Carbon Sequestration, Dallas, TX – March 20-21, 2000
2000	3/00 - 2/01	WV WRRRI	67,966	25,001	25,001	216	WRRRI 131 - AMD Models for TMDL Development and Implementation 36,501
2000	1/00 - 6/01	WVURC	17,400	17,400	17,400	n/a	High Definition GPS Support for Natural Resource and Environmental Management (Yuill)
1999	1999	WVTNC	4,800	4,800	4,800	n/a	Smoke Hole North Fork Bioreserve GIS
1999	1999	Various	24,000	24,000	24,000	n/a	ArcView Training (completed) 8 classes
1999	1999	NRCCE	9,631	9,631	9,631	212	Funding for Phipps for Summer, 1999 for work on WV 173
1999	1999	CVI	5,000	5,000	5,000	231	CVI Web Hosting and Support
1999	10/99 -9/00	IHTIA	8,818	6,040	6,040	214	GIS for Institute for Industrial Archeology
1999	9/99 - 7/00	WVDEP	110,000	110,000	110,000	190	Extending the Capabilities of the Watershed Characterization and Modeling System
1999	8/99	Hatch	50,000	50,000	50,000	n/a	Funding from Experiment Station for development of NRAC capabilities
1999	7/99	NRCCE	400	400	400	n/a	Carbon Sequestration/Climate Change Workshop, Gaithersburg, MD - Travel Funds
1999	5/99	NCAR	787	787	787	n/a	Travel expenses to attend Water Section Workshop of the National Climate Change Program for the Appalachian Region
1999	3/99- 12/99	CVI	8,500	8,500	8,500	231	New River Internet Geographic Information System (NRI-GIS)
1998	11/98 -1/04	WVDEP	1,091,737	822,543	822,542	200	Development of Digital Inventory of Hollowfill Mining in WV (Yuill)
1998	8/98- 10/04	USDOE/ NETL	2,275,765	209,617	209,617	236	WV173 - Monongahela Basin Mine Pool Project
1998	8/98 - 1/99	WVDA	53,200	40,000	40,000	176	Spatial Analysis of Water Quality in the Potomac Headwaters (Phase 1) (Yuill)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
1998	7/98-7/99	CVI	66,500	50,000	50,000	175	Canaan Valley Institute GIS Phase Two (Yuill)
1998	6/98-6/98	USDA/FS	29,200	20,000	20,000	178	Participation in Climate Change National Assessment Summer Meeting and planning for the Central and Southern Appalachian Regional Assessment
1998	6/98	NCAR	4,806	4,806	4,806	n/a	Travel expenses to attend Water Section Workshop of the National Climate Change Program for the Appalachian Region
1998	6/98-6/98	NRCCE	9,194	9,194	9,194	182	Development of NASA Earth Science Applications Center Proposal (Yuill)
1998	5/98	USDA/FS	1,967	1,967	1,967	n/a	Travel expenses to attend Climate Change National Assessment Summer Meeting in Monterey, CA
1997	11/97-10/98	WVDEP	26,667	20,000	20,000	170	Visiting Scholar Support for GIS and Oracle Development Projects
1997	10/97-2/98	WVHTF	38,991	38,991	38,991	172	Development of Highway Planning and Design Spatial Analysis and Decision Support Tools
1997	10/97-9/98	CVI	43,800	30,000	30,000	174	Canaan Valley Institute GIS Phase One (Yuill)
1997	9/97-6/99	NRCCE	200,365	41,814	41,814	164	WV132 - Monongahela Basin Mine Closure - Implications for Regional Water Resources - EPA funding (Ziemkiewicz-PI, Donovan, Rauch, Strager)
1997	6/97-10/97	GFI	27,000	27,000	27,000	162	Analytical Review of Water Quality and Remediation Projects in the Lower Cheat River Watershed (for USACOE)
1997	5/97-5/00	USDA/FS	75,172	53,950	53,950	161	Development of Spatial Data for th Fernow Forest (Yuill)
1997	5/97	WVUF	500	500	500	n/a	Faculty Development Grant
1997	4/97	WVUF	300	300	300	n/a	Faculty Travel Grant
1996	12/96-4/97	GFI	8,000	8,000	8,000	158	Development of Maps Showing Water Quality in the Tygart Watershed Using the WQMS
1996	8/96-8/98	WVDEP	175,560	131,999	131,999	156	Water Quality Modeling System Development Using GIS

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
1996	5/96 - 4/97	USFWS	25,000	25,000	25,000	231	Development of a GIS System for the Canaan Valley National Wildlife Refuge (with Yuill)
1995	6/95- 6/96	WVDEP	145,000	68,318	68,318	150	AML Mapping and Analysis
1995	1/95 - 4/97	USFWS	62,594	62,594	31,297	152	Development of Values for Wildlife Refuges: An Application to the Canaan Valley National Wildlife Refuge (with Phipps)
1995	1/95- 8/95	FWI	14,600	10,000	10,000	146	Aquaculture An Initial Economic Feasibility Analysis
1994	7/94- 6/95	WVDNR	58,400	40,000	20,000	140	Meadow River Wetland Values Study (Yuill)
1994	5/94 - 4/96	WV WRRRI	390,000	130,000	65,000	148	Development of Comprehensive, Computer Based, Watershed Level, Water Quality Policy Analysis and Implementation Tools in an Extended Geographic Information System Framework (with Phipps and Yuill)
1994	1/94 - 6/94	WVDEP	46,547	34,998	34,998	134	Development of Water Quality Modeling System (WQMS) 2.0(with Phipps and Yuill)
1993	10/93	WVUF	300	300	300	n/a	Faculty Travel Grant
1993	6/93 - 3/94	Various	55,000	55,000	500	n/a	A New Paradigm for Developing and Using Environmental Information: An Information Science Approach (AAEA Workshop)
1993	2/93- 12/93	NRCCE	5,000	5,000	5,000	n/a	Hazardous Waste Site Resource Group for the Winfield Project
1993	1/93 - 9/94	USDOE/ METC	66,335	66,335	27,500	n/a	Socio-Economic Assessment of Alternative Environmental Restoration Technologies(with A. Isserman and W. Trumbull)
1992	10/92 - 3/93	WVDEP	27,968	21,990	15,000	121	Development of a Water Quality Model Running Inside SPANS(with Phipps and Yuill)
1991	7/91 - 6/94	NMLRC	202,201	119,052	59,526	120	WV43-Hydrological Modelling for Watershed Restoration. Development of a Plan for the Reclamation of Sovereign Run Watershed (with Phipps and J. Skousen)
1991	6/91 - 6/92	USFWS	47,210	23,012	11,506	118	An Assessment of the Economic Effects of the Proposed Canaan Valley National Wildlife Refuge on Tucker County(with Phipps)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
1991	4/91 - 9/92	WVUTC	6,000	6,000	6,000	106	Expansion of the Cheat River Basin Recreation study
1990	10/90 - 12/91	USDA/ NRCS	22,255	15,455	7,727	116	Potential Recreation Benefits of Proposed Water Projects for the North Fork of the Hughes River and the Cherry River Watersheds (with Phipps)
1990	10/90 - 9/92	TVA	14,300	14,300	5,800	114	Soil Fertility Investigations(with W. Bryan)
1990	8/90 - 8/92	WVU/ RRI	21,000	21,000	21,000	n/a	Development of Methodologies to Evaluate the Regional Effects of Nonpoint Source Pollution Control Policies (with Phipps)
1990	7/90	WVUF	300	300	300	n/a	Faculty Development Grant
1990	7/90	WVUF	400	400	400	n/a	Faculty Development Grant
1990	5/90 - 4/92	WV WRRRI	118,432	39,274	19,637	110	Economic Value of Stream-Based Tourism and Recreation in West Virginia's Cheat River Basin (with L. Pyle)
1990	7/90 - 6/94	NMLRC	175,932	175,932	25,808	108	WV10-Evaluation of Reclamation Technologies(with J. Skousen and Phipps)
WVU Sub total			55,825,582	46,679,494	14,446,746	Summary of all grants and contracts --West Virginia University, 1990-2012	
Purdue University							
1988	3/88- 9/89	USDA/ NRCS	79,200	55,000	55,000	n/a	Recreational Benefits for Improved Water Quality.
1987	10/87 -9/89	USDA/ ES	17,000	17,000	17,000	n/a	Information Sources on Agriculture and the Environment.
1987	8/87- 9/88	USDA/N RCS	14,400	10,000	10,000	n/a	Proposal for the Development of WVI, a Water Value Index.
1987	1/87- 12/88	IAES	14,000	14,000	14,000	n/a	Economic Implications of Weather Variability for Indiana Crop Farms.
1985	7/85 - 6/88	IAES	139,680	97,000	67,000	n/a	Planning Technically and Economically Efficient Corn Production Systems for Mid-size Indiana Farms (with D. Mengel)
1985	2/85 - 2/88	USDA/N RCS	267,840	186,000	93,000	n/a	Off-site Costs of Agricultural Production: A Framework for Analysis (with S. Lovejoy)

Initial Year	Date	Source of Funds	Project Budget	External Funds	Fletcher/ NRAC	NRAC Project	Project Title and Collaborators
1984	10/84 - 9/85	Various	46,000	46,000		n/a	National Symposium on Social Science and Erosion sponsored by NC-162.
1984	/84 - 9/87	TVA	206,863	155,690	52,990	n/a	Economic Impacts and Implications of Reduced Tillage for Farm-level Fertilizer Use and the Fertilizer Industry.
1984	10/84 - 9/86	USDA/ ARS	131,523	50,522	15,500	n/a	Importance of Spatial Variability in Evaluation of Soil Erosion Impacts on Field and Farm Units (with D. Beasley)
1984	6/84- 9/85	USEPA	8,596	8,596	8,596	n/a	Farm Level Economic Effects of Alternative Tillage.
1984	1/84 - 12/85	IAES	13,000	13,000	13,000	n/a	Farm Level Economic Effects of Adopting Alternative Tillage Systems.
1984	1/84- 12/85	IAES	13,000	13,000	13,000	n/a	The Economic Effects of Soil Erosion on Agricultural Productivity.
1983	6/83 - 9/84	TVA	226,055	121,000	90,000	n/a	Economic Impacts and Implications of Reduced Tillage for the Fertilizer Industry.
PU	Subtotal		1,177,157	786,808	449,086		Summary of all grants and contracts --Purdue University, 1983-1989
	6/83- 12/13	TOTAL	57,246,949	47,710,512	15,140,042		Summary of all grants and contracts June 1983 through December 2016.

*Abbreviations Used for Source of Funds

AESC	Allegheny Energy Service Corporation
CESU	Cooperative Ecosystem Studies Unit
CVI	Canaan Valley Institute
ECA	Energy Company of America
FDC	Friends of Deckers Creek
FWI	Freshwater Institute
GFI	Gannett Fleming, Inc.
GI	Geostellar, Inc.
IAES	Indiana Agricultural Experiment Station
IHTIA	Institute for the History of Technology and Industrial Archaeology
MDBM	Maryland Bureau of Mines
MDDE	Maryland Department of the Environment
MTU	Michigan Technological University

NEETC	National Environmental Education and Training Center, Inc.
NCAR	National Center for Atmospheric Research
NERCRD	Northeast Regional Center for Rural Development
NFWF	National Fish and Wildlife Foundation
NMLRC	National Mine Land Reclamation Center
NRCCE	National Research Center for Coal and Energy
NSF	National Science Foundation
OPB	Oregon Public Broadcasting
PITG	Parsons Infrastructure Technology Group
TVA	Tennessee Valley Authority
UMCES	University of Maryland Center for Environmental Sciences
USA/WVNG	US Army, West Virginia National Guard
USDA/ARS	US Dept. of Agriculture, Agricultural Research Service
USDA/ES	US Dept. of Agriculture, Extension Service
USDA/FS	US Dept. of Agriculture, Forest Service
USDA/NRCS	US Dept. of Agriculture, Natural Resource Conservation Service
USDA/NRI	US Dept. of Agriculture, National Research Initiative
USDC/NOAA	US Dep. Of Commerce, National Oceanic & Atmospheric Administration
USDOE	US Dept. of Energy
USDOE/FETC	US Dept. of Energy, Federal Energy Technology Center
USDOE/METC	US Dept. of Energy, Morgantown Energy Technology Center
USDOE/NETL	US Dept. of Energy, National Energy Technology Center
USDOI/GS	US Department of Interior, Geological Survey
USDOI/NPS	US Department of Interior, National Park Service
USDOI/OSM	US Dept. of the Interior, Office of Surface Mining
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
WHC	Westsylvania Heritage Corp.
WVAES	West Virginia Agricultural Experiment Station
WVDA	West Virginia Department of Agriculture
WVDEP	West Virginia Department of Environmental Protection
WVDHHR	West Virginia Department of Health and Human Resources
WVDNR	West Virginia Division of Natural Resources
WVDTR	West Virginia Department of Tax and Revenue
WVEPA	West Virginia Environmental Protection Agency
WVHTF	West Virginia High Technology Foundation
WVSAMB	West Virginia Statewide Addressing and Mapping Board
WVTNC	West Virginia Nature Conservancy

WVUF	West Virginia University Foundation
WVU/RRI	West Virginia University, Regional Research Institute
WVURC	West Virginia University Research Corp
WVUTC	West Virginia University Tourism Center
WVWRI	West Virginia Water Resources Research Institute

Selected Professional Service and Committee Activities

West Virginia University (WVU)	
WVU Research Office Faculty Advisory Committee	2011-
WVU Associate Vice President for Research Cabinet II	2012-
WVU Graduate Council (Chair 2010-11)	2008-2011
US-China Clean Energy Workshop Planning Committee	2004-present
GroupWise Task Force	2004-2010
WVU-IT Support Group	2004-present
Chair, Search Committee for Director of Economic Development	2002-2003
RRI Advisory Committee member for RRI Director search	2001
Member, Tom Witt Review Panel	2001
Strategic Vision Team for Computing and Information Resources	1994
Review Committee - Strategic Planning for the Twenty First Century	1993-94
Graduate Economics Faculty Committee (College of Business and Economics and Davis College)	1993-present
Institutional Hearing (Grievance) Committee, Chairman	1992-93
Academic Computing Advisory Committee Subcommittee on Software Site Licensing - 1993-95 Subcommittee for Campus-Wide Software Selection - 1995	1991-present
Regional Research Institute Search Committee for Advanced Research Professor	1991-92
Regional Research Institute Search Committee for Research Assistant Professor (2)	1990-91
WV Water Research Institute, Research Advisory Committee	1989-92
Davis College of Agriculture, Natural Resources and Design (DCANRC)	
Davis College Faculty Support Committee – Ex Officio	2012-
Davis College Dean Search	2010-2011
Davis College Graduate Council	2008-2011
Davis College Executive Committee	2007-2009
Davis College Marketing Committee	2005-2009
College Promotion and Tenure Committee	2003
Strategic Planning Steering Committee	1997
Environmental Studies Ad Hoc Committee	1992-93
Search Committee for Hydrology position(s) - Resource Management and/or Plant and Soil Science	1991-92
Information and Technology (formerly Computer) Committee Chair Ex-officio	1989-2000, 2002-2004 1991-2000, 2002-2007 2007-2010t
Publications Committee	1990-2010

Division of Resource Management	
Graduate Program Chair for the Resource Management and Sustainable Development PhD Program	2006-2009
Division Promotion and Tenure Committee Chair	1995,1998, 2004, 2005
Space Committee	2002-2003
Agricultural and Resource Economics	
Non-thesis MS Written Exam Committee (Chair)	2003
Search Committee for Assistant Professor in ARE – Chair	2000, 2001
Search Committee for joint ARE-Extension faculty position – Chair	2002
Advisor, Graduate Resource Economics Club	1995-present
MS in Community Economic Development and Design Committee	2001
United Way Campaign Coordinator	1998
Chair, Agricultural and Resource Economics Program	1996-2002
Undergraduate Program Committee	1996-2002
Promotion and Tenure Committee Chair	1995,1998, 2005, 2006 1995
Ph.D. Preliminary Examination Committee Chair	1993-1995, 2000, 2001, 2004, 2005 1993-94, 2000, 2004, 2005
Ph.D. Field Exam in Natural Resource and Environmental Economics(Chair)	1991,1995-2008
Graduate Committee Chair	1992-2002, 2005-present
Computer Committee Chair	1989-2000 1992-2000
Graduate Curriculum Committee	1990-92
Armentrout Study Committee	1989-99
Graduate Curriculum Planning Committee - Resource Economics, Joint Committee between Agricultural Economics and MER	1989-91
Undergraduate Teaching Committee	1989-91

Regional Research Committees and Other Research Organizations	
S-1004 – TMDL Vice Chair 2003-2004 Chair 2004-2005	2002-2006
W-2133 – Benefits and Costs Transfer in Natural Resource Planning Secretary Vice Chair Chair	1989-present 1999 2000 2001
Resource Policy Consortium	1989-1999
NCR-111 – Natural Resource Use and Environmental Policy Secretary Vice-Chair	1986-1989 1987-1988 1988-1989
NC-162 – Socio-Economic Aspects of Erosion Control	1983-87

State/Regional/National/International Service and Advisory Committees	
USDA/CSREES Review Panel	2004-2005, 2008
UDDA/CSREES SBIR Program Reviewer	2002-2007
River of Promise Committee	2000-2004
Cheat River TMDL Trading Program (technical advisor)	2001-2004
West Virginia Water Quality Trading Task Force (technical advisor)	2002-2004
Advisor to WVDEP on anidegradation rules	2002
Organized an Open Meeting on Growth, Development, and Land Use at Shepherd College (organized in conjunction with Shepherd College and WVU faculty members) presented to about 200 local citizens	2001
Organized Stream Values Workgroup Roundtable with State and Federal agencies and WVU researchers on methods for valuing stream restoration projects	2000-2002
West Virginia GIS Steering Committee	1997-present
Potomac River Agricultural Waste Steering Committee	1997-2001
Ad Hoc Committee to advise the WV Department of Environmental Protection on the Development of a Water Quality Security Fund	1992-1994
Canaan Valley Task Force, Tucker County, WV	1991-1996
Liaison Committee to the Lower Susquehanna Basin NAWQA Study	1991-1997
West Virginia Acid Mine Drainage Task Force	1990-1999
Illinois-Indiana Sea Grant Program, Research Advisory Committee	1987-88

Professional Service Committees and Assignments	
National Associations of Agricultural Economics Administrators (NAAEA) President Elect	2009- 2013-2014
C-FARE Board of Directors – At-Large Member	2010-
American Agricultural Economics Association representative to the C-FARE Board of Directors	2006-2010
American Agricultural Economics Association Task Force on Name and Image, Chair of Focus Group Subcommittee	2002-2003
Northeast Association of Agricultural and Resource Economists - Nominating Committee	1993-1994
American Agricultural Economics Association, Economic Statistics and Information Resources Committee (formerly Economic Statistics Committee) Chair	1989-present 1991-1994
American Agricultural Economics Association Liaison to the Census Advisory Committee on Agricultural Statistics Chairman	1989-1999 1996-97
American Agricultural Economics Association Representative to the Council of Professional Associations on Federal Statistics Board of Directors Treasurer Vice Chair Chair Past Chair	1990-present 1994-present 1996-1997 1997-1998 1999-2000 2001-2002
Reviewer for journals: AJAE, JEEM, Land Economics, ARER, JSWC, Environmental Management	

Department of Agricultural Economics, Purdue University	
AES & David Ross Review	1986
Production Preliminary Examination Committee Chair, Spring, 1984 Chair, Spring, 1985 Chair, Summer, 1986	1984-88
Computer Committee	1982-83
Outstanding Ph.D. Dissertation Selection Committee	1982
College of Agriculture, Purdue University	
Task Group on Low Input/Alternative Agriculture	1987-88
Selection Committee for Outstanding Freshman, Sophomore, & Junior students, School of Agriculture	1983
Ad-Hoc Ag. School Computer Subcommittee	1983