

Name: Bruce A. Tschantz Birth Date: September 15, 1938

Present Rank: Condra Professor of Civil Engineering
The University of Tennessee
September 1974

Previous Rank: Assistant Professor of Civil Engineering, 1965-69 (UTK)
Associate Professor of Civil Engineering, 1969-74 (UTK)
Professor of Civil Engineering, 1974-present (UTK)

Education Record:

<u>School</u>	<u>Attended (Dates)</u>	<u>Degree</u>	<u>Date</u>
Ohio Northern University	1956-60	B.S.C.E.	1960
New Mexico State University	1960-62	M.S.C.E.	1962
New Mexico State University	1962-65	Sc.D.	1965

Experience Record:

<u>Employer</u>	<u>Position</u>	<u>Dates</u>
New Mexico State University	Graduate Assistant	1960-62
New Mexico State University	Research Associate	1962-65
Bureau of Indian Affairs	Sanitary Engineer (GS-11)	1962-63
White Sands Missile Range	Civil Engineer (GS-11)	1965
The University of Tennessee	Assistant Professor	1965-69
The University of Tennessee	Associate Professor	1969-74
The University of Tennessee	Professor of Civil Engr.	1974-present
U.S. Geological Survey	Hydrologist (GS-12)	1973-76
Tennessee Attorney General Office	Consultant,	1975-79
and Department of Transportation	Expert Witness	1983-present
Executive Office of the President, Office of Science and Technology Policy, Wash. D.C.	Consultant, Advisor	1977-79
Tennessee Dept. of Conservation, Div. of Water Resources	Consultant for Dam Inspections	1978
Federal Emergency Management Agency, Washington, D.C.	Chief, Federal Dam Safety (on one year leave from Univ. of Tenn.)	1980
Council of State Governments, Lexington, KY	Advisor, Consultant	1983-84
Oak Ridge National Laboratory	Dam Safety Advisor, Consultant	1987-present
Tenn Water Resources Research Center	Acting Director	1991-1994
Environmental Consulting Engineers, Inc., Knoxville	Senior Consultant	1992-1996
S&ME Inc., Arden, N. C	Dam Safety Engineering Consultant	2000

Research Activities (1970-Present)

<u>Year</u>	<u>Title of Research Project</u>	<u>FTE Involvement</u>	<u>FTE Months</u>
1969-73	Remote Sensor Utilization for Envr. Syst. Studies	Director, Prin. Inv.	28
1969-70	Exper. Invest. of Hydraulic Transients & Thermal Waste Disper. in River-Res. System, Phase II	Prin. Inv.	4
1970-71	Exper. Invest. of Hydraulic Transients in River-Res. System, Phase III	Prin. Inv.	4
1971	Safety Control of Small Dams	Prin. Inv.	1
1971-72	NASA Atmos. Aerosol Proj.	Co- Prin. Inv.	2
1973	WRRC-Stripmined Watershed Hydrologic Study	Prin. Inv.	3

Research Activities (1970-Present) (Cont'd):

<u>Year</u>	<u>Title of Research Project</u>	<u>Involvement</u> FTE	<u>Months</u> FTE
1973-74	NSF-Hydrology Impact of Stripmining Impact of Coal Surface Mining on Water Quality on Mountain Dr. Basin Systems (EEP)	Co- Prin. Inv.	1
1972	Inventory and Analysis of Tennessee Dams and Related Hazards (Civil Defense)	Prin. Inv.	2
1974-76	UT/USGS Cooperative Agreement for Est. Streamflow Gaging Stations (OWRT)	Prin. Inv.	1
1975-77	Environmental Aspects of Coal Production in the Appalachian Region (ERDA)	Co- Prin. Inv.	4
1976-78	Water Resources Investigation to Assess the Hydrologic Effects of Stripmining in the New River Basin, UT-USGS Cooperative Agreement	Prin. Inv.	1
1975-82	Environmental Aspects of Coal Production on the Appalachian Region, Task I, Hydrologic Impact of Stripmining, ERDA-DOE	Prin. Inv.	16
1979-80	Dam Safety Hazard Analysis Study (OWRT/TVA)	Prin. Inv.	0
1982-83	Review of State Non-Federal Dam Safety Programs (FEMA)	Prin. Inv.	1
1983	Knox County Drainage Study	Prin. Inv.	1
1983-86	TDHE M.S. Program in Envr. Engr.	Coordinator	3
1984-85	Martin-Marietta Flow Gage Calibration Study	Prin. Inv.	3
1985-87	UT Center of Excellence for Hazardous Waste Mgt.		
1985	WRRC Levee Impact Study for W. Tenn.	Prin. Inv.	2
1985	FEMA Study to Review State Dam Safety Programs	Prin. Inv.	1
1989-92	Saturn Corp-Reuse of Cooling Water, Stormwater	Prin. Inv.	3
1993-	ORNL-Env. Science Div. Res. Program	Prin. Inv.	1
1993-94	Develop NPDES Gen. Permit for Transp. Facil.	Co-Prin Inv.	3
1995-96	Modeling of the Hydrologic Transport of Mercury in Upper East Fork Poplar Creek	Prin. Inv.	4
1996-	Upper East Fork Poplar Creek Sediment Transport Modeling	Prin. Inv.	2
1997-pres	Stormwater Management Practices and Education Program for Counties and Municipalities in Tenn.	Co-Prin Inv.	5

Research and other Funds Obtained (1968-Present):

<u>Year</u>			<u>Type of Involvement</u>
1968-73	Air Force \$812K-Project Themis	Remote Sensing	Dir., P.I.
1968-69	WRCC (Dept. of Int.) \$16.4K	Hydraulic Transients	P.I.
1969-70	WRCC (Dept. of Int.) \$30.8K	Hydraulic Transients	P.I.
1970-71	WRCC (Dept. of Int.) \$28.2K	Hydraulic Transients	Co-P.I.
1972	Tech. Assis. Ctr. Approx. \$4K	Dam Safety Study	P.I.
1971	Engin. Exp. Stat. \$.5K	Safety Control of Small Dams in TN	P.I.
1972-73	WRCC (Dept. of Int.) \$4.2K	Hydrologic Impact of Strip Mines	P.I.
1971-72	NASA \$27K	Atmos. Aerosol Study Using Remote Sensing	Co-P.I.
1973-74	NSF/Rann \$27K	Hydrologic Impact of Strip Mines	P.I.
1974-75	NSF/Rann \$31K	Hydrologic Impact of Strip Mines	P.I.
1974-75	State of Tenn. \$20K	Impact of Coal Surf. Mining on W.Q.	Co-P.I.
1974-75	OWRT \$5K	UT/USGS Cooperative Agreement	P.I.

Research and other Funds Obtained (1968-Present) (Cont'd):

<u>Year</u>			<u>Type of Involvement</u>
1975-81	ERDA/DOE Approx. \$270K	Hydrologic Impact of Strip mining	Co. P.I.
1976-78	USGS (\$24K matching cooperation)	Water Resources Data	P.I.
1979-81	OWRT/TVA \$10K	Dam Safety	P.I.
1982	FEMA \$18K	Dam Safety	P.I.
1983	Knox. Co. \$20K	Drainage	P.I.
1984	Martin Marietta Corp, \$40K (2 proj)	Surface Water and Groundwater	P.I.
1985-88	UT Center of Excell. (TN) \$211K/yr	Hazardous Waste Mgt.	P.I.
1985-88	WRCC \$28K/Yr	Levee Study	P.I.
1985	FEMA \$11.2K	State Dam Safety	P.I.
1985	Martin-Marietta \$3K	Flow Study	P.I.
1983-86	TDHE - (\$76,000)	M.S. Program in Envr. Engr. Division Dir.	Coordinator
1987-Pres	TDHE (110,000±)	M.S. Program in Envr. Engr.	Coordinator
1986-Pres	TVA/UT Internship Program \$60K	M.S. Program in Envr. Engr.	Coordinator
1989	ASDO State Dam Safety Review \$21K	Dam Safety	P.I.
1989	ORNL White Oak Dam Safety Emergency Action Project \$25K	Dam Safety	P.I.
1989-92	Saturn Corp \$72K	Blowdown Water & Hydrologic Study	P.I.
1993-	ORNL Env. Science Div. \$600K/yr	Surface/Groundwater Projects	Co-P.I.
1991-94	TN Wtr. Resources Res. Ctr. \$101K/yr	Water Resources Projects	Dir.
1993	AID/UT Agricult. Inst. Program-3 week June 1993 (\$3K)	Workshop on Water Resources for Tanzanian Visitors	
1993-94	TN Dept. of Env. & Conserv. \$50K	NPDES Gen. Permit	Co-P.I.
1995-96	Lockheed-Marietta Energy Systems, ORNL, Y-12 Plant \$74.2K	Mercury Transport Modeling	P.I.
1996-97	Lockheed-Martin Energy Systems Y-12 Plant \$21K	Upper East Fork Poplar Creek Sediment Transport Modeling	P.I.
1998	Lockheed-Marietta Energy Systems, ORNL	Preliminary Design Alternatives for a Rain- fall Exclusion System	P.I.
1999	Association of State Dam Safety Officials (ASDSO)/FEMA \$2.8K	Student Intern Support for Researching Literature of Tree Penetration in Dams	P.I.
1999-00	Provost's Graduate Fund for Excellence (\$4284 for J. Chandler, 12 months)	1/4-time graduate student support	P.I.
1997-pres	Tn. Department of Agriculture/EPA \$149.2K (+59.7 matching) Phase I \$139.6K (+89.3 matching) Phase II	Stormwater Management Practices and Education Program for Counties and Municipalities in Tennessee - Phases I, II	Co-P.I.

Extension and Public Service Activities (1972-Present):

<u>Year</u>		<u>Activity</u>
1972	State Water Resource Research Conference	Workshop Session Coordinator and Reporter
1973	State Soil Conservation Workshops on Dam Safety	Invited Speaker
1972	Advised Officials on Dam Hazard Emergency in Public Service Consultants McMinn County	
1973	Tennessee House Hearing on Dam Safety Bill, Nashville	Testified

Extension and Public Service Activities (1972-Present) (Cont'd):

<u>Year</u>		<u>Activity</u>
1973	UT Task Force to Study City of Knoxville Waste Treatment Plant Site and Prepare Final Environmental Impact Report	Member
1973	Assist Division of Water Resources, Tennessee Dept. of Conservation on Dam Safety Program	Technical Advisor
1973	Knox MPC Natural Systems Inventory: Land Use-Environmental Impact Study: Decision Framework Design	Participant
1974-76	West Knox Utility Citizens Board of Advisors	Member
1974-76	Tennessee Engineering Careers Co-Committee Guidance, (TECC)	Chairman
1974	Tech Society Water & Wastewater Comm.	Technical Advisor
1974	Professional Engineers & Univ. Relations Committee, UT Faculty Representative	Member
1974	Prepared & graded special Tennessee PE Licensing Examinations	Special Consultant
2000	Proctoring for Tennessee Board of Professional Engineers FEE Exam	Proctor
2000	Session Coordinator & Moderator, Reservoir Modeling, Tenth Annual Tennessee Water Resources (AWRA) Symposium, Montgomery Bell State Park, Tennessee, April 2000	Moderator
1974	EPA Public Hearings on Strip Mine Permits, Oak Ridge,	Participant
1974-76	Tennessee Society of Professional Engineers Bd. of Director	Member
1975-75	Knoxville-Knox County Metropolitan Planning Committee, "EPA 208"	Advisory Committee
1976	Contributor and Reviewer, State of Kentucky, Dept. of Natural Resources and Environmental Protection, Bureau of Land Resources, "Guidelines for Maintenance and Inspection of Dams in Kentucky."	Contributor/Reviewer
1979-pres	ASCE Hydraulics Division	Technical Paper Reviewer
1980-pres	Numerous technical, state, Federal and professional organizations concerned about dam safety	Invited Speaker
1986-pres	UCOWR	USGS Research Proposal Reviewer
1991-94	Board of Directors, DISMAS House, Inc. (local Half-way for ex-offenders)	Board Member, Vice Pres.
1998-pres	Knox Co. Stormwater Advisory Committee (SWAC)	Technical Advisor
1999	ASCE Hydraulics Journal	Reviewer
1998-pres	Member/participant, Knoxville Water Quality Forum	Member

Publications:

A. Books, Pamphlets

1. The Inspection and Maintenance of Privately-owned Dams in Tennessee, The University of Tennessee, September 1972.
2. Encyclopedia of Southern History, LSU Press, 1978 (Contributor).
3. Quick Reference Guide on Wet Basements and Crawl Spaces-- Causes and Remedies for Typical Problems, Pamphlet published by Knox County, June 1990, 3 pp.

Publications (Cont'd):

B. Other

1. Remote Sensing in Water Resources, Proceedings IEEE 10th Annual Conference, pp. MI-1 to MI-4, April, 1972.
2. Remote Sensor Utilization for Environmental System Studies, Final Report, Volumes I, II, and III, Project THEMIS, December 1972, 384 pp.
3. Remote Sensing and Hydrology, paper presented at the UNESCO/ International Hydrological Decade, (IHD) Reading, England, July 1970 (Co-authored with R.L. deJong).
4. A Report on Safety Control of Small Dams in Tennessee, Engineering Experiment Station Report, December 1971 (Co-authored with K.N. Spencer).
5. Remote Sensing--A Tool for the 70's, paper published for Instrument Society of America (ISA) Conference, Gatlinburg, Tennessee, May 1971.
6. Water Resources Applications in Remote Sensing, paper presented to Remote Sensing and Photogrammetry Symposium, International Remote Sensing Institute, San Francisco, California, August 1971.
7. An Interdisciplinary Approach to Floodplain Problems, ASCE Reprint, Nat. ASCE Conference, Atlanta, January 1972 (Co-authored with Glenn Wall).
8. Tennessee Non-Federal Dam Inventory Study, Technical Assistance Center, The University of Tennessee Institute of Public Service, January 1973.
9. Strip-Mined Watershed Hydrologic Data Acquisition Study, Research Report No. 35, Water Resources Research Center, August 1973.
10. Contour Coal Mining Overburden as Solid Waste and Its Impact on Environmental Quality, AEEP, December 1974 (Co-authored with R.A. Minear).
11. Impact of Coal Surface Mining on Water Quality of Mountain Drainage Basin Streams, Florida, October 1975 (Co-authored with R.A. Minear).
12. Evaluation of Heavy Metals Mobilization Within Coal Contour Mining Spoil Banks, ACS Conference, Phila., PA, April 1975 (Co- authored with R.A. Minear, et al.).
13. Hydrologic Data Needs in Strip Mining Watersheds and the Relation to Water Quality Sampling, Proceedings, Standard Reference Materials Energy/ Environment Workshop, National Bureau of Standards Internal Report, Gaithersburg, MD, April 28, 1976
14. The Effect of Coal Surface Mining on Water Quality of Mountain Drainage Basin Streams, Journ. WPCF, Vol. 48, No. 11, Nov. 1976, pp. 2549-69 (Co-authored with R.A. Minear).
15. Review and Responsibility of State Dam Safety Programs, Proceedings, ASCE-Engineering Foundation Conference, Responsibility and Liability of Public and Private Interests on Dams, Asilomar Camp Grounds, Pacific Grove, CA, Sept. 1975.
16. Dams, Flood Control; 2 chapters in Encyclopedia of Southern History, Louisiana State University Press, R.W. Twyman and D.C. Roller, Editors, 1978, pp. 326-27; 439-40.
17. Impact of Coal Strip Mining on Water Quality and Hydrology in East Tennessee, WRRRC Completion Report, No. 47, Project No. A041-Tenn, November 1975.

Publications (Cont'd):

18. Status of States' Dam Safety Programs, Proceedings, CE- Engineering Foundation Conference, The Evaluation of Dam Safety, Asilomar Camp Grounds, Pacific Grove, California, Nov.-Dec. 1976.
19. Federal Dam Safety - Report of the OSTP Independent Panel (Executive Office of the President, Office of Science and Technology Policy), Washington, D.C., December 6, 1978 (Consultant and Co-author).
20. The Non-Federal Dam Problem, Invited Testimony, U.S. Senate Hearings, Committee on Environment and Public Works, Water Resources Subcommittee, U.S. G.P.O., Washington, D.C., February 3, 1978, pp. 40-76.
21. Review and Responsibility of State Dam Safety Programs, Invited Testimony, Hearings, Dam Safety Committee on Government Operations, House of Representatives, U.S. G.P.O., Washington, D.C., March 17, 1977, pp. 68-148.
22. Improving Federal Dam Safety, Federal Coordinating Council of Science, Engineering and Technology Federal Review Report, Executive Office of the President, Office of Science and Technology Policy, Washington, D.C., November 15, 1977, (Contributor and Coordinator), 180 p.
23. New Perspectives on Safety of Dams - Developments at the Federal Level for Both Federal and Non-Federal Dam Safety Programs, Paper/address presented at August 18, 1978 Stanford Univ. Conference on Dam Safety, published in International Water Power and Dam Construction, London, England, October 1978, pp. 57-58.
24. The Search for Dangerous Dams - A Program to head off Disaster, Smithsonian Magazine, Washington, D.C., April 1978, pp. 36-45 (Collaborator, Consultant).
25. Impacts of Strip Mining on River Basin Hydrology and Sediment Yield, Abstract, Proceedings, Symposium on Environment and Mining Research and Demonstration Activities on Southern Appalachia, Appalachian Resources Program Report No. 52, The University of Tennessee, Environmental Center, December 1978.
26. Hydrologic Impact of Strip Mining on Small East Tennessee Watersheds, Environmental Aspects of Coal Production in the Appalachian Region, DOE Progress Report, Contract EY-76-S-05- 4946, The University of Tennessee, Environmental Center, Volume ORO-4946-3, pp. 29-50, May 31, 1978 (Co-authored with D.E. Overton).
27. Evaluation of Dam Safety (cited), International Water Power and Dam Construction, London, Vol. 29, No. 1, January 1977, pp. 54-57.
28. A Survey of Coal Strip Mining Legislation with Regard to Sedimentation Control, Appalachian Resources Publication 48, U.T. Environment Center, February 1976, 20 pp.
29. Knox County Soil Erosion and Sedimentation Control Ordinance (Co-drafted with W.P. Boone Dougherty), Knoxville, Tennessee, December 20, 1977.
30. Dam Safety: National Concern--Hope for the Future, Knoxville News Sentinel Feature Article, Engineers Week, February 19, 1978.
31. \$70 Million for Dam Inspections, Article Collaborator/Reviewer with M.J. Bartos, Asst. Editor ASCE Civil Engineering Magazine, March 1978, pp. 64-68.
32. Federal Guidelines for Dam Safety, Contributor, coordinator, and editor for Federal Coordinating Council for Science, Engineering, and Technology, Washington, D.C., June 1979, 39 pp. + Appendices.
33. Early Progress to Implement the Federal Guidelines for Dam Safety and Recommendations to Improve Dam Safety Programs, Reports to President, Federal Emergency Management Agency, July 1980, 12 pp. + Appendices.
34. Dam Safety, FEMA Magazine Feature Article, Winter 1980-81, Washington, D.C.

Publications (Cont'd):

35. What's After Phase I of Corps Dam Safety Program? (Federal Role in Non-Federal Dam Safety), Proceedings Paper Presented to Association of Western States Engineers, Phoenix, October 1, 1980.
36. Defining a Federal Agenda to Encourage Strong State Programs and Owner Responsibility for Non-Federal Dams, Paper presented at FEMA Conference on Dam Safety Challenge of the 80's, New York, Nov. 17, 1980, 15 pp.
37. Analysis of Environmental Issues Related to Small-Scale Hydroelectric Development III: Water Level Fluctuation , Publication No. 1591, Oak Ridge National Laboratory, ESD, ORNL/TM-7453, (Co-authored with S.G. Hildebrand, S. Tam, et al.), October 1980.
38. Application of and Guidelines for Using Available Dam Break Models, Water Resources Research Center Report No. 83, Knoxville, TN., May 1981, 83 pp + Appendices (Co-authored with R.M. Mojib).
39. Recent United States Progress to Improve Dam Safety, paper selected for publication in: "Dam Safety Practices and Concerns in the United States," April 1982, U.S. Committee on Large Dams (USCOLD), Technical Activities Committee, presentation/distribution at the 14th ICOLD Congress, Rio de Janeiro, May 1982.
40. Probable Impact of Federal Regulations on Erosion, Sediment Transport, and Hydrologic Balance, Task 3, Report to U.S. Department of Interior, Office of Surface Mining, UT Energy and Environmental Center, July 1982.
41. Dam Safety Research - Current, Planned, and Future, Contributor, FEMA, Federal Interagency Committee on Dam Safety (ICODS), Research Sub-committee, May 1982.
42. Safety of Non-Federal Dams - A Review of the Federal Role, Contributor, Committee on the Safety of Non-Federal Dams, Assembly of Engineering, National Research Council, National Academy of Sciences Press, Washington, D.C. 1982, 53 pp.
43. Environmental Effects of Contour Coal strip Mining - Hydrologic Impact Summary Report, U.S. Department of Energy, Office of Health and Environmental Research, Argonne National Laboratory, December 1983, 44 pp + Appendix.
44. Report on Review of State Non-Federal Dam Safety Programs, Report to Federal Emergency Management Agency (FEMA), Office of Federal Dam Safety, Washington, D.C., February 28, 1983, 49 pp + Appendices.
45. Review of State Non-Federal Dam Safety Programs, Paper presented at MIT Dam Safety Conference, New Perspectives on the Safety of Dams, July 25-29, 1983, Boston, 26 pp.
46. Sediment Yield and Surface Runoff Water Quality From Steep- Slope, Back-to-Contour Surface Mining Spoil in the New River Basin of Tennessee (Co-authored with P.S. Dickens and R.A. Minear), Paper presented at 1983 National Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation, Lexington, KY, Nov. 28-Dec. 2, 1983, 7 pp.
47. Hydrologic Characterization of the Saturated Zone Associated with the Contour Surface Mining Spoil in the New River Basin of Tennessee (Co-authored with P.S. Dickens and R.A. Minear), Paper presented at 1983 National Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation, Lexington, KY, Nov. 28-Dec. 2, 1983, 7 pp.
48. Love Creek Drainage Basin Demonstration Study (Co-authored with L.A. Melroy), Final Report to Knox County and City of Knoxville, Tennessee, July 31, 1983, 130 pp.
49. Safety of Existing Dams - Evaluation and Improvement (Co- author with National Academy of Sciences Committee on Safety of Existing Dams), National Academy Press, Washington, D.C., 1983, 354 pp.
50. SCS Design Storm Hydrograph (SCS-DSH) - A BASIC Hydrologic Program for the Apple II Computer (Manual & Program), October 1983, 50 pp. (copyrighted for publication).

Publications (Cont'd):

51. Review and Comparison of Dam Break Flood Procedures, Invited Abstract and Paper prepared for National ASCE Meeting presentation, October 1984, San Francisco.
52. SCS User-Defined Storm Hydrograph (SCS-USH) - A BASIC Hydrologic Program for the Apple II Microcomputer (Manual & Program), February 1984, 50 pp. (copyrighted publication).
53. Overview report on State Laws, Regulating, and Procedures for Dam Safety, Presentation/paper for Association of State Dam Safety Officials (ASDSO) National Conference: Dam Safety Issues of the 80's, June 17-24, 1984, Denver.
54. SCS User-Defined Storm Hydrograph (SCS-USH) for Microcomputer, Paper/Presentation, ASCE Conference on Hydrologic Applications for Microcomputer, Proceedings, Vol. 2, pp. 1274-79, Orlando, FLA., August 12-16, 1985.
55. 1985 Report on Review of State Non-Federal Dam Safety Programs, Report to Federal Emergency Management Agency (FEMA), University of Tennessee, December 31, 1985, 56 pp plus Appx. A-E.
56. Sediment Yield and Water Quality from a Steep-Slope Surface Mine Spoil, (co-authored with P.S. Dickens and R.A. Minear), Transactions, American Society of Agricultural Engineers (ASAE), Jan-Feb. 1986, 8 pp.
57. A Computer-Assisted Analysis of Piezometric Observations from TVA's Tellico Project (co-authored with James French, TVA), Paper presentation at National ASCE Conference on Computing in Civil Engineering, Proceedings, pp. 178-192, October 27-29, 1986, Boston, Mass.
58. Perspective on Hazard Mitigation of Dam Failure Floods, Paper Presentation and Proceedings, International Workshop, Mitigation of Hazard Due to Extreme Natural Events in America, Mayaguez, Puerto Rico, Jan. 19-24, 1987.
59. Vol. I, Private Levee Study in Tennessee: Extent, Hydraulic Impact, and Management of Levees (co-authored with T.R. Gangaware, W.F. Brandes, J.B. Rehder, R.A. Wolf), UT Publ. No. RO1-2537-29-002-88, Report No. 114, Dec. 1987, Tenn. Water Resources Research Center.
60. Tree Growth on Earthen Dams: A Survey of State Policy and Practice (Co-authored with J. D. Weaver), National Report, Civil Engineering Department, University of Tennessee, Knoxville, Tenn., July 1988.
61. ASCE Task Committee Activities on Microcomputer Software in Urban Hydrology, Proceedings, 1988 National Hydraulic Engineering Conference, Colorado Springs, Colo., August 8-11, 1988, pp. 600-603.
62. Hydrologic Alteration of Mountain Watersheds from Surface Mining (Co-authored with P.S. Dickens and R.A. Minear), Journal of the Water Pollution Control Federation, Vol 61, No. 7, July 1989, pp. 1249-60.
63. Flood Impact and Management of Levees in Tennessee, co- authored with W.F. Brandes, Proceedings, ASCE 1989 Irrigation and Drainage Conference, National Water Conference and Life Symposium, Newark, Delaware, July 18-20, 1989, 7 pp.
64. The Importance of Dam Safety (Does Anyone Care?), Keynote Paper presented to North Carolina Dam Safety Workshop, April 13, 1989, Raleigh, N.C., 9 pp. (to be reprinted in Water Resources Research Institute Newsletter).
65. Vendor Survey Report by ASCE Task Committee on Microcomputer Software in Urban Hydrology, (co-authored with members of ASCE TC, B. Tschantz, Chairman), Presentation at ASCE National Conference on Hydraulic Engineering and International Symposium on Sediment Transport Modeling, New Orleans, LA, August 14-18, 1989.
66. Vendor Survey Report by ASCE Task Committee on Microcomputer Software in Urban Hydrology, (co-authored with members of ASCE TC, B. Tschantz, Ch; presented by D. Kilber), ASCE Sixth Conference on Computing on Civil Engineering, Sept 11, 1989, Atlanta, GA, (Submitted articles to ASCE CE Magazine and CE Computing Review).

Publications (Cont'd):

67. 1989 Report on Review of State Non-Federal Dam Safety Programs, Federal Emergency Management Agency, Monograph, FEMA- 188, January 1990, 75 pp.; Appdc A-D (Sole Author).
68. Tree Growth on Earthen Dams: A Survey of State Policy and Practice, Proceedings, 6th ASDSO Annual National Conference, Oct. 1-5, 1989, Albuquerque, N.M., pp 446-52.
69. Re-use of Cooling Tower Blowdown Wastewater for Crop Irrigation, Report to Saturn Corp, June 1990, 83 pp.
70. Wet Basement and Crawl Space Problems Causes and Remedies-- Tips for Homeowners and Home Buyers, Monograph, Published by Knox County, June 1990, 10 pp.
71. A Study of the Treatment and Re-use of Cooling Water at General Motor's Saturn Plant, Proceedings/Extended Abstracts/Presentation, AWRA, Third Tennessee Water Resources Symposium, Nashville, Aug. 7-9, 1990, pp. 145-150. (Co-author).
72. Quick Reference Guide on Wet Basements and Crawl Spaces-- Causes and Remedies for Typical Problems, Pamphlet Published and Distributed by Knox County to Libraries, Realtors, Builders/Contractors, etc. Knoxville, TN, June 1990, 4 pp., (Sole Author).
73. The Importance of Dam Safety (Does Anyone Care in Tennessee?), Keynote Address/Paper, Conference on Dam Safety, ASDSO/FEMA/State of Tennessee, November 14, 1990, Maxwell House, Tennessee, 11 pp. (sole Author).
74. Proposed Methodology to Update Embayment Sedimentation Data for TVA Reservoirs, Fifth Federal Interagency Sedimentation Conference, March 18-21, 1991, Las Vegas, NV, poster session (co-author with D.L. Stone).
75. Proposed Methodology to Update Embayment Sedimentation Data for TVA Reservoirs, Paper presented to 1991 National ASCE Conference, Hydraulic Engineering, Nashville, TN, July 29-Aug. 2, 1991, Proceedings, pp. 740-745. (Co-authored with D. L. Stone)
76. Concrete Block Weir and Orifice Discharge Characteristics for Stormwater Detention Outlet Control, Paper presented to 1991 Fourth Tennessee Water Resources Symposium, Sept. 24-26, 1991, Knoxville, TN, Proceedings (Co-authored with A.N.Wylie).
77. Case Study: Steele Creek Dam Safety Analysis--Bristol, Tennessee, Waterpower '91 Conference, Denver, Colo, July 1991, Proceedings, (co-authored with B. Auld).
78. Study of the Treatment and Re-use of Cooling Water Blowdown at General Motors Saturn Plant, 1991 ASCE National Conference on Environmental Engineering, Reno, Nev., Proceedings, (Co-authored with M. Barnett and B. Robinson).
79. Water Quality Project/90's Study: 1990-91 Data Summary Report for Tennessee and Clinch Rivers, May 10, 1991, 87 pp.
80. The Importance of Dam Safety (Does Anyone in Tennessee Care?), Feature Article in Tennessee Public Works Magazine, March/April 1992, V. 9, No. 7, pp. 24-25 (Sole Author).
81. Preliminary Inventory and Inspection Report for Structures at Sixteen ORNL Water Retention Sites, Doc. No. ORNL/TM-12049, Report to ORNL/Martin Marietta Energy Systems, Inc., January 1992, 92 pp. (Sole Author).
82. Microcomputer Software in Urban Hydrology, AWRA, Hydata News and Views, September 1991, ASCE Task Committee, B. Tschantz, (Chm), Kibler, D., Jennings, M., Lewis, G., and Walesh, S., pp. 27-32.
83. Waste Area Grouping 2 Contaminant Sediment Transport Quick Response Project (co-authored with Fiuzat, A.A., Eiffe, M.A., Report to Oak Ridge National Laboratory, U.S. Dept. of Energy Contract DE-ACO5-84OR21400, November 23, 1992, 34 pp + Appdc. A-D.

Publications (Cont'd):

84. Program Activities and Research Priorities of the Tennessee Water Resources Research Center (TNWRRC), invited paper and presentation (Current and Emerging Water Resources Research Needs in Tennessee), 4 pp., Extended Abstract, Fifth Tennessee Water Resources Symposium, Nashville, TN Oct. 19-21, 1992, p. 127.
85. Design Considerations for Sediment Basins Used in Controlling Sediment-Related Nonpoint-Source Pollution from Disturbed Areas, Extended Abstracts, Fifth Tennessee Water Resources Symposium, Nashville, TN, Oct. 19-21, 1992, pp. 63-65, (co-authored with T. Moore and J. Smoot).
86. Directory of Water Resources Research Expertise in Tennessee, Tennessee Water Resources Research Center (TNWRRC), Knoxville, TN, July 1992, 70 pp. (Co-authored with T. Gangaware, D. Galbreath).
87. FY 1991 Program Report, Tennessee Water Resources Research Center (TNWRRC), U.S. Geological Survey, Reston, VA, October 1992, 35 pp.
88. Reducing Non-point Source Water Pollution by Preventing Soil Erosion and Controlling Sediment on Construction Sites, A Training Manual for Construction Inspection Personnel, Tennessee Department of Transportation, March 1992, 173 pp.
89. Updated Hydrologic and Spillway Analysis for White Oak Dam for Martin Marietta Energy Systems, Inc., DOE, MMHE 3.01-001, November 29, 1993, 10 pp. Appc A-C.
90. Seismic Safety of Dams - Paper for Discussion Control U.S. Earthquake Consortium (CUSEC), Memphis, Feb. 3-4, 1993, 7 pp.
91. FY 1992 Program Report, Tennessee Water Resources Research Center (TNWRRC), U.S. Geological Survey, Reston, VA, September 1993, 38 pp.
92. The Beaman Lake Dam Experience- The Orphan that No One Wanted (To Fix), Tennessee Public Works Magazine, May/June 1995, Vol. 12, No. 8, (co-authored with K. Rutherford and C. Granju).
93. Ward Valley: An Examination of Seven Issues in Earth Sciences and Ecology, Final Report of the National Academy of Sciences Committee To Review Scientific and Technical Safety Issues Related to the Ward Valley, California, Low Level Radioactive Waste Site, Board on Radioactive Waste Management, Commission on Geosciences, Environment and Resources, National Resources Council, Washington, D.C., National Academy Press, 1995, 212 pp + Appdcs. (authored chap 7, co-authored chap 2).
94. Armoring Protection on Earthfill Dams, Proceedings and Paper to be presented at Assoc. of State Dam Safety Officials (ASDSO), 1995 Annual Conference, Atlanta, Sept. 15-20, 11 pp. (co-authored with S.R. Henderson and S.A. Shipman).
95. Decommissioning a Dam--The Beaman Lake Experience, Proceedings and Paper to be presented at Assoc. of State Dam Safety Officials (ASDSO), 1995 Annual Conference, Atlanta, Sept. 15-20, 10 pp. (co-authored with K.B. Rutherford and C.L. Granju).
96. Modeling of the Hydrologic Transport of Mercury in the Upper East Fork Poplar Creek (UEFPC) Watershed, Final Report (Refereed) to Lockheed Martin Energy Systems, Inc., September 1996, 255 pp (co-authored with B. M. Moran).
97. Determination of White Oak Creek Flood Frequency at White Oak Dam, Final Report to Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tn., August 1966, 24 pp + Appdc. A-D, (co-authored with J.B. Reese and J. L. Smoot).
98. Determining a 100-year Peak Flow and Associated Errors From Simulated Streamflow, proceedings paper and presentation to the Seventh Annual (AWRA) Tennessee Water Resources Symposium, Nashville, Tn., February 24-27,1997 (co-authored with J. B. Reese and J. L. Smoot), Proceedings, pp 136-138.

Publications (Cont'd):

99. Performance Analysis of Constructed Urban Stormwater Detention Ponds, paper and presentation to the Seventh Tennessee Water Resources Symposium, Nashville, Tn., February 24-27, 1997 (co-authored with T. E. Romans), Proceedings, pp 212-217.
100. Stormwater Detention Pond Discrepancies Can Result in Downstream Damage, Tennessee Public Works Magazine, co-authored with Terry E. Romans, July/August 1997, Volume 15, No. 2, pp. 6-11.
101. HEC-6 Sediment Transport Study of Upper East Fork Poplar Creek (UEFPC), Final Report No. Y/EN-5697 (peer reviewed), Lockheed Martin Energy Systems, Inc., December 1997, 83 pp + Appdc. A-C (co-authored with K.T. Moore).
102. Stormwater Management Practices and Education Program for Counties and Local Communities in Tennessee, proceedings paper and presentation to the Eighth Annual (AWRA) Water Resources Symposium, Nashville, Tn., March 2-4, 1998 (co-authored with T. R. Gangaware, J. L. Smoot, et al), Proceedings, pp. 1C 35-40.
103. Longitudinal Dye Dispersion in a Hydroplan Tailwater, proceedings paper and presentation to the Eighth Annual (AWRA) Water Resources Symposium, Nashville, Tn., March 2-4, 1998 (co-authored with J. H. Hoover), Proceedings, pp. 2C 23-27.
104. Stormwater Quantity and Quality Management - A Primer for Local Officials, Published by Tennessee Nonpoint Source Pollution Program, December 1999, (co-authored by J. Smoot, K. Thomason, T. Gangaware, and L. Wilks).
105. Floating Debris on Lakes and Rivers: Effects on Operation, Use, and Safety of Lakes and Dams, Proceedings paper and presentation to Ninth Annual Water Resources (AWRA) Symposium, Nashville, Tn., April 12-14, 1999 (co-authored with A. Swann and S. Jacks), pp 2A1-5.
106. Stormwater Management Practices in Tennessee, Tennessee Public Works Magazine, July/August 1999, v. 15, No. 2, pp. 22-26.
107. Current National Policies Concerning Woody Plant Penetrations at Dams, Invited paper and presentation, Association of State Dam Safety Officials (ASDS) and Federal Emergency Mgt. Agency (FEMA) Workshop on Plant and Animal Penetrations of Earthfilled Dams, Knoxville, Nov 30 - Dec 2, 1999.
108. Bibliography on the Effects of Woody Vegetation on Dams, research report to Association of State Dam Safety Officials (ASDSO), University of Tennessee, Knoxville, September 1999, 18 pp.
109. Impact of Floating Debris (Drift) on Bridge and Culvert Hydraulics, Poster session and Proceedings, Tenth Annual Tennessee Water Resources (AWRA) Symposium, Montgomery Bell State Park, Tennessee, April 10-12, 2000 (with T. G. Muhlbachler), pp P-29 - P-34..
110. Evaluation of Stormwater Quality Performance of Catch Basin Filter Inserts, Proceedings paper and presentation to Tenth Annual Tennessee Water Resources (AWRA) Symposium, Montgomery Bell State Park, Tennessee, April 10-12, 2000 (with C. R. Wagner), pp 2A-29 - 2A-34.
111. Performance Evaluation of Constructed Urban Stormwater Detention Ponds in the Knoxville (Tennessee) Area, Presentation paper and Proceedings, Second International Conference on Decision Making in Urban and Civil Engineering, Lyon, France, November 20-22, 2000, pp. 59-70.
112. Current Problems, Practices and Policies on Tree and Woody Plant Penetration of Dams, Presentation paper and proceedings, ASDSO National Dam Safety Conference - Dam Safety 2000, September 26-29, 2000, Providence, R. I., 12 pp.
113. Model Library for State Dam Safety Programs, ASDSO manual, co-authored with T. Hampton, D. Lawrence, L. Von Thun, and S. Mayfield, December 2000, 38 pp.

Completed Thesis/Non-Thesis Graduate Students Supervised (1970- Present):

<u>Year</u>	<u>Topic</u>	<u>Degree</u>
1968	Temperature Prediction in a Thermal Waste Receiving Stream Using Heat-Budget Method	M.S.C.E.
1968	Survey of Approaches to Optimum Floodway Selection	M.S.C.E.
1968	Experimental Flume Investigation of Hydr. Trans. in River-Res. System	M.S.C.E.
1969	One-Dimensional Open Channel Heat Dispersion	M.S.C.E.
1969	Establishing an Engineering Basis for Flood-plain Regulations	M.S.C.E.
1971	Experimental Flume Investig. of Hydr. Trans. In Steady Flow River	M.S.C.E.
1971	Safety Control of Small Dams in Tennessee	M.S. Env. Eng.
1971	Analysis in Monetary Value of Flood Detention in Three TVA Reservoir Units	M.S. Env. Eng.
1973	An Engineering Study of the Need for Unification of Utility Districts in Anderson County	M.S. Env. Eng.
1973	General Guides and Design Criteria for Spillway Capacity and Dam Top Elevations	M.S. Env. Eng.
1974	Effect of Urbanization of Peak Runoff	M.S. Env. Eng.
1974	Simulation of Flow in Strip Mine Spoil	M.S. Env. Eng.
1975	Hydrologic Impact of Stripmining on New River Watershed	Ph.D.
1977	Stormwater Response of Small, Virgin and Strip Minded Watersheds Within the New River Basin	M.S. Env. Eng.
1977	A Parametric Model of Suspended Solids Concentrations for Two Strip Mined Watersheds	M.S. Env. Eng.
1978	Stripmine Silt-Trap Dam Design	M.S. Env. Eng.
1978	Strip Mining Sediment Yield	M.S. Env. Eng.
1980	Risk Analysis Methodology	M.S. Eng. Admin.
1981	Sensitivity Analysis of NWS Dambreak Model Applied to Johnstown Flood July 1977.	M.S. Civ. Eng.
1981	Development of Stream Discharge and Suspended Solids Relationship in the Straight Creek Watershed near St. Charles, Virginia	M.S. Civ. Eng.
1982	Procedures for Developing a Municipal Drainage Ordinance	M.S. Env. Eng.
1982	Review of State Non-Federal Dam Safety Programs	M.S. Env. Eng.
1983	Love Creek Drainage Basin Demonstration Study	M.S. Env. Eng.
1985	E. Fork Poplar Creek Mercury Study	M.S. Env. Eng.
1985	Huntsville Spring Branch (Ala) DDT Contaminated Sediment Transport	M.S. Civ. Eng.
1985	Concentrated Flow Erosion Study	M.S. Civ. Eng.
1986	Proposed Wetlands Protection Act/Analysis for Tenn.	M.S. Env. Eng.
1986	Hydrologic Simulation of Solid Waste Disposal Sites	M.S. Env. Eng.
1986	1985 Review of State Non-Federal Dam Safety Programs	M.S. Env. Eng.
1986	Hydraulic Impact of Private Levees on South Forked Deer River Flooding, Tennessee	M.S. Env. Eng.
1986	Sediment Transport via the Einstein Method	M.S. Env. Eng.
1986	Analysis of Piezometer Observations from TVA's Tellico Dam-Main Embankment	M.S. Env. Eng.
1987	Toxic Chemical Spill Fate Prediction Model	M.S. Env. Eng.
1987	Hydrogeological Characterization of the White Oak Flood Plain	M.S. Env. Eng.
1987	Simulated Discharge from Small Watershed Before, During, and After Disturbance	Ph.D. in C.E.
1988	Tree Growth on Earthen Dams: A Survey of State Policy and Practice	M.S. Env. Eng. (Pub. Wks.)
1988	Tractive Stress Model for the Analysis or Design of Stable Earth Channels (Computerized version of SCS TR-25)	M.S. Env. Eng.
1988	Study of the Amibara (Ethiopia) Drainage Project Plan	M.S. Env. Eng.
1988	Sensitivity Analysis for a Landfill Cover Cap Using the HELP Program	M.S. Env. Eng.
1988	Sensitivity Analysis of "BREACH" Model Parameters Applied to Earthen Dam	M.S. Env. Eng.
1988	Development of HEC-2 Field Data Entry System	M.S. Civ. Eng.

Completed Thesis/Non-Thesis Graduate Students Supervised (1970- Present (Cont'd):

<u>Year</u>	<u>Topic</u>	<u>Degree</u>
1988	HEC-2 Bridge Application Training Manual	M.S. Env. Eng.
1988	Development of a Demonstration Earth Dam Seepage Inspection Expert System	M.S. Env. Eng.
1989	Evaporation Calculations at TVA Paradise Fossil Plant	M.S. Env. Eng.
1989	Sensitivity Analysis on White Oak Creek Watershed at Oak Ridge, TN	M.S. Env. Eng.
1989	TR-55 Training Notes and Problems	M.S. Env. Eng.
1989	Computer Program for Gradual Failure of Earthen Dams Due to Overtopping	Ph.D.
1989	Transport of Contaminated Sediments Over a Small Industrialized Watershed	Ph.D.
1989	Application of a Finite Element Groundwater Model to an Experimental Low-Level Waste Disposal Site	M.S. Env. Eng.
1990	Taste and Odor Control Guidelines for Public Drinking Water Supplies	M.S. Env. Eng.
1990	Trees on Earthen Dams: A Case Study and Plan to Investigate Impacts on Dam Safety	M.S. Env. Eng.
1991	Statistical Characterization and Trend Analysis for Tennessee and Clinch River Flow at Chickamauga and Norris Dams	M.S. Env. Eng.
1991	Thermal Compliance Study at the Tennessee Valley Authority Bull Run Fossil Plant	M.S. Env. Eng.
1991	Peak Flow Estimates for the Eastern Half of the Tennessee River Valley	M.S. Env. Eng.
1991	Concrete Block Weir and Orifice Discharge Characteristics for Stormwater Detention Outlet Control	M.S. Env. Eng. (Wylie)
1992	Erosion and Sediment Control Regulation for the City of Brentwood (Tennessee)	M.S. Civ. Eng.
1992	Analysis of the Tennessee River Stream Gaging Records at Savannah, TN.	M.S. Env. Eng.
1992	Column Evaporation Study Conducted on Fly Ash for the Evaluation of Evaporation Routines of Three Numerical Water Budget Models	M.S. Env. Eng.
1992	Evaluating Spillway Adequacy of Dams in the State of Tennessee	M.S. Civ. Eng.
1993	Evaluation of Relocation of Rain Gage in the Hiwassee River at Pressley	M.S. Civ. Eng. (Maidens)
1994	Characterization and Analysis of Selected Water Quality Parameters of the Clinch and Power River Basins	M.S. Civ. Eng. (Brede)
1994	Risk Based Procedure for Managing a Spillway Gate Testing Program for Dam for Dam Safety	M.S. Civ. Eng. (Ketron)
1995	Armor Protection for Earthen Dams	M.S. Env. Eng. (Henderson)
1995	Preliminary Water Quality Trend Analysis of Straight Creek Watershed (Virginia)	M.S. Civ. Eng. (Norton)
1995	Preliminary Hydraulic Analysis and Alternatives for Reducing Flood Damage Along Richland Creek (in the vicinity of Morgantown, Tennessee)	M.S. Env. Eng. (James)
1995	Importance of Sediment Size Class Information for Modeling Particle Bound Contaminant Transport During Floods	M.S. Env. Eng. (Clevenger)
1995	Flooding Along Richland Creek	M.S. Civ. Eng. (James)
1996	Second Creek Modifications for a Proposed Greenway at Brookside Mills	M. S. Civ. Eng. (Lee)
1996	A Preliminary Hydrologic and Engineering Analysis for the Conceptual Design of a Grassy Swale and Water Quality Pond at the Proposed World's Fair Site "Green" Parking Lot	M. S. Civ. Eng. (McNeely)
1996	Modeling of the Hydrologic Transport of Mercury in the Upper East Fork (UEFPC) Watershed	M. S. Env. Eng. (Moran)
1996	A Study of the 500-year Floodway on Little Turkey Creek in Farragut, Tennessee	M. S. Civ. Eng. (Bagley)
1996	Whittemore Branch Sewer System Rehabilitation Flow Monitoring and Evaluation Plan	M. S. Civ. Eng. (Dempsey)
1997	Application of Historical Precipitation Data to Quantitative Precipitation Forecasts for Reservoir System Operations	M. S. Env. Eng. (Armwine)
1997	Estimating a Flood Frequency for White Oak Creek Watershed at White Oak Dam Using Simulated Streamflow Data	M. S. Env. Eng. (Reese)
1997	Rainfall Forecasted Inflows for TVA Reservoir Operations	M. S. Env. Eng. (Kerr)
1997	Performance Analysis of Constructed Urban Stormwater Detention Ponds	M. S. Env. Eng. (Romans)

Completed Thesis/Non-Thesis Graduate Students Supervised (1970- Present (Cont'd):

<u>Year</u>	<u>Topic</u>	<u>Degree</u>
1997	Second Creek Modifications for a Proposed Greenway at Brookside Mills	M. S. C. E. (Lee)
1997	Development of Computer Program to Extend TR-55 Detention Storage	M. S. Env Eng (LaCamera)
1997	HEC-6 Sediment Transport Study of Upper East Fork Poplar Creek (UEFPC)	M. S. Env. Eng. (Moore)
1997	Investigation of the Hydraulic Relationship of Narrow Rectangular Slot Weirs	M. S. Env. Eng. (Pleasant)
1998	Longitudinal Dye Dispersion in Nottely Dam Tailwater	M. S. Env. Eng. (Hoover)
1998	Characterization of the Doe River Flood of January 1998	M. S. Env. Eng. (Silvus)
1998	In-Situ Bioremediation: A Cost Effective Approach to Reduction of Total Petroleum Hydrocarbons in Ground Water	M. S. Env Eng (Bradshaw)
1998	An Evaluation of Rulebased Simulation as a Tool for Flood Analysis: A Case Study	M. S. Env. Eng. (Hardy)
1999	Floating Debris on Lakes and Rivers: Effects on Operation, Use and Safety of Lakes and Dams	M. S. Env.Eng. (Swann)
1999	An Evaluation of the Stormwater Quality Performance of Catch Basin Insert/ Filters	M. S. Env.Eng. (Wagner)
1999	Floating Debris as a Design and Analysis Factor for Bridges and Culverts	M. S. Env.Eng (Mihlbachler)
2000	Importance of Accurate Flow Data in Calculating Contaminant Loadings	M. S. Env Eng. (Hopper)

Other Scholarly Activities (1970-Present):

1. Invited Lecturer NSF National short course in Geographic Applications in Remote Sensing, The University of Tennessee, August 1969.
2. Invited Speaker at Carson Newman College Physics Department Seminar on Remote Sensing, February 1971.
3. Invited Lecturer at UT Space Institute short course on Instrumentation for Pollution and Measurement, Tullahoma, Tennessee, May 1971.
4. Invited Speaker at University Council on Water Resources Conference, Corvallis, Oregon, August 1971.
5. Invited Lecturer at EXXON (EPR/Alaska on Remote Sensing Applications for Trans-Alaska Pipeline Surveillance, Houston, September 1973.
6. Invited presentation at NSF National Energy-Environmental Symposium on Coal Production, December 1974.
7. Invited Speaker at West Virginia University, C.E. Department, Morgantown, West Virginia, February 1975.
8. Speaker at TSPE Annual Meeting, Fall Creek Falls, Tennessee (1) Career Guidance Activities; (2) Faculty Consulting, June 1975.
9. Keynote Speaker, 1976 Engineering Foundation Conference on "The Evaluation of Dam Safety," November 28, 1976, Pacific Grove, California.
10. Program Speaker, ASCE Annual Meeting, "Safety of Small Dams," Knoxville, Luncheon Address, November 18, 1977.
11. Symposium on Flooding and Strip Mining, "Reflections on Research Experiences on Relationship Between flooding and Strip Mining," Scientists and Engineers for Appalachia, Berea College, Berea, Kentucky, November 10, 1977.
12. Panel Speaker, Conference on Dams, Rivers, and National Water Policy, "Federal and Non-Federal Dam Safety, "Environmental Policy Center, April 8, 1978, Washington, D.C.

Other Scholarly Activities (1970-Present) cont.:

13. Luncheon Address, Chattanooga, Engineers Club, "Dam Safety in the U.S.," April 3, 1978, Chattanooga, Tennessee.
14. Invited Speaker, Stanford/MIT Seminar on Dam Safety, "Administration (Exec. Office of President) Perspectives on Federal and Private Dam Safety," August 28, 1978, Stanford, California.
15. Invited Witness, Senate Sub-Committee on Water Resources, Presented Testimony on "The Non-Federal Dam Problem," February 3, 1978, Washington, D.C.
16. Participant/Speaker (with R. Rose), The Citizen's Advisory Committee of the 208 State Program, "On-going Research Related to Mining Impacts on Water," The University of Tennessee, Knoxville, Tennessee, April 1, 1978.
17. Participant in U.T. Tau Beta Pi Engineering Speakers' Bureau, 1982.
18. Approximately a dozen additional talks, seminars, presentations on Dam Safety, Hydrologic Impact of Stripmining, and U.S. Water Policy through January 1979.
19. Lecturer, FEMA Multiprotection Design Institute (Floods), Emmitsburg, MD, August 1981 and July 1982.
20. Member, Stanford University Research Advisory Committee on Risk Analysis, 1980-81.
21. Instructor, University of Tennessee Short Course on Embankment Dam Safety, Analysis, and Design, Knoxville, September 12-16, 1983.
22. Chairman, National ASCE Subcommittee on Dam Safety, Water Policy Committee.
23. Faculty/Lecturer, FEMA Multiprotection Design Institute (Floods), Emmitsburg, MD, July 1985.
24. Workshop Lecturer, Dam Safety Hydrologic, Hydraulic, and Regulatory Concerns, State of Alaska, Anchorage, September 9-14, 1985.
25. Seminar Speaker, UT Department of Geography, Dam Safety in U.S., Knoxville, May 15, 1986.
26. Seminar Lecturer, Tennessee Department of Health and Environment, Dam Safety Hydraulics, April 25, 1986, Nashville, Tennessee.
27. Faculty/Lecturer, FEMA Multiprotection Design Institute (Dam Break Floods), Emmitsburg, MD, July 1986.
28. Speaker, Association of State Dam Safety Officials, Annual Meeting, October 13, 1986, Austin, Texas.
29. Speaker, ASCE National Conference, Paper Presentation, October 29, 1986, Boston, Mass.
30. Speaker, NSF-Univ. Puerto Rico, Latin American Conference, Mitigation of Hazard Due to Extreme Natural Events in America, Mayaguez, P.R., January 20-22, 1987.
31. Moderator and Speaker Session on Microcomputer Applications in Urban Hydrology, 1988 ASCE Hydraulic Engineering Conference, Colo, Springs, Aug 10, 1988.
32. Attended 2-day Apple sponsored workshop on MAC-2 applications, Gatlinburg, Feb 1989.
33. Keynote Speaker at North Carolina Dam Safety Workshop, Raleigh, N.C., April 13, 1989.
34. Session Moderator and Speaker, ASCE National Conference on Hydraulic Engineering, Microcomputer Software Task Committee Report, New Orleans, LA, August 14-18, 1989.
35. Coordinator and Lecturer, Urban Drainage Control Workshop, joint with City of Knoxville/Knox Co.; July 20-21, 1989,

University of Tennessee, Knoxville.

36. Coordinator, ASDSO Southeast Regional Technical Seminar, Geosynthetics in Dams, joint with ASDSO, State of Tennessee, and FEMA November 8-9, 1989.
37. Speaker/Panelist, Minn. Sect. ASCE and Univ. of Minn. Water Resources Conference, Minneapolis, Oct. 30, 1990.
38. Co-Coordinator, Keynote Speaker - 1992 ASDSO South Regional Technical Seminar, Hydraulic Capacities of Dams, ECE, August 5-6, 1992, Hyatt-Regency, Knoxville, TN.
39. Speaker, Knoxville Tech. Society, An Academic Response to Cultural Changes to Engineering Students, Knoxville, TN, May 1994.
40. Panelist/Speaker, West Knox County Homeowners Assoc., Public Forum on Drainage and Hydrology, Pellis, St. University, July, 1994.
41. Panelist/Speaker: Farragut Community Drainage Forum, Farragut, Tn., 1995.
42. Member, Second Creek Clean-up Technical Subcommittee, Knoxville, (1995-pres.)
43. Discussion Facilitator, National ASCE Education Conference, Denver, Co., June 1995.
44. Speaker, Urbanization Impacts on Hydrology, East Tennessee Soil and Water Conservation Society, Knoxville, Tn., November 1996.
45. Session Moderator, Urban Hydrology/Stormwater, Seventh Tennessee Water Resources Symposium, Tenn. Section, AWRA, Nashville, Febr. 24-26, 1997.
46. Invited Luncheon Speaker, Performance Analysis of Constructed Urban Stormwater Detention Ponds, Tennessee Nonpoint Source Partnership Conference, Knoxville, Candy Factory, October 27, 1999.
47. Workshop coordinator, speaker, & panelist: Stormwater management Workshop for Local Government Officials: 1. Ordinances and Legal Requirements for Effective Stormwater Management and (2) Stormwater Practices in Tennessee, Nashville, June 23-24, 1999.
48. Co-chair, coordinator and host, ASDSO/FEMA Workshop on Plant and animal Penetrations of Earthfilled Dams, UT Conference Center, Knoxville, Nov. 30 - Dec 2, 1999.
49. Coordinator, ASDSO/FEMA Steering Committee on Plant and Animal Penetrations on Dams, 1999-2000.
50. Presenter and participant in UT Graduate School and Agriculture College-sponsored round-table workshop/discussion on Water Resources Planning for Peruvian (Piura) visitors, June 12, 2000.
51. Invited speaker, Second International Conference on Decision Making in Urban and Civil Engineering, Lyon, France, November 20-22, 2000

University Administration and Committee Assignments:

1970	UT ASEE Branch Chairman
1970	Department and College-Level UT "Self-Study" Committees on Research
1970-71	CE Department Faculty Secretary
1971-71	College Engineering Honors Study Committee
1970-73	Member, University Faculty Senate
1970-73	Engineering Science Graduate Program Committee

University Administration and Committee Assignments (cont.):

1971-71	Special Senate Committee on Faculty Governance
1972	Member, Search Committee to Select CE Department Head
1972-1977	UT Library Committee
1972-1977	UT Student English Committee
1972	University Faculty Affairs Committee
1972	State Science Fair Judge
1973	UT Sabbatical Leave Study Committee
1973, 1978	Representative, College of Engineering Strategic Planning Workshop
1974-75	College of Engineering, 1976 ASEE Conf. Planning Committee, Chairman Transp. Planning
1974-76	UT Faculty Affairs Committee
1975	UT Women's Rights Committee
1975	UT NSF Research Symposium: Workshop Chairman, Dec. 1975
1975	Tennessee Professional Engineers/University Relations Committee, Faculty Representative
1976-86	CE Dept. Acting Head for special times, at request of Dept. Head.
1981	Search Committee, U.T. Dean for Research
1981	U.T. World's Fair Subcommittee on Residual Use of World's Fair Site
1982	Chairman, Civil Engineering Department Finance Committee
1982	Search Committee, Director, Energy and Environment Center
1983	Chairman, ASCE Subcommittee on Dam Safety
1983	Program Chairman, Knoxville Technical Society
1983	College Committee on Computer-Aided Design (CAD)
1983-1988	University Writing Committee
1985-1988	CE Computer Committee
1986-1988	College Promotion and Tenure Committee
1987-1988	CE Senior Seminar Committee
1988-90	College Repr, University Undergraduate Council; General Requirements Committee
1988-95	CE Department M.S. Public Works Committee
1988	CE Department Bylaws Committee
1989	CE Department Search Committee (Chm)-WR Position
1990	CE Department Search Committee-3 Envir. Position
1991	Agr. Engin. Department Search Committee-Dept. Head
1991-1994	UT/TVA/ORNL Consortia, Water Resources Task Committee Representative
1991	University of Tennessee Environmental Studies Committee
1992-1992	College of Engineering Host, Jr. Science and Humanities Symposium
1992-1993	City of Knoxville, Water Quality Forum Committee for Second Creek Demonstration Project
1992-1993	College of Engineering Dean Search Committee
1992-1995	Mentor to Dr. J. Smoot, Assoc. Professor of Civil Engineering
1994	College of Engineering Co-Op Director Search Committee
1994-1996	Chairman, Civil & Envir. Engineering Department Instruction and Curriculum Committee
1995	College Representative to University Academic Prelude (AP) Pilot Orientation Program for Whittle and Tennessee Scholars.
1995-96	Chair, Civil & Environmental Engineering Faculty Search Committee
1994-pres.	Reviewer, Tenn. Water Resources Research Center Annual Program Research Proposal Reviews
1995	Chair, 25th Anniversary Celebration Program Planning Committee, UTK Environmental Engineering Program.
1995	Member, College of Engineering Undergraduate Education System Committee
1995	Member, UTK School of Planning Mid-cycle Review Committee
1995	Coordinator, Environmental Engineering Program M. S. Written Examination for Non-thesis Students
1995-96	National Academy of Sciences, National Research Council, Panel to Review Specific and Technical Safety Issues Related to Ward Valley, California, Low-Level Radioactive Waste Sites (LLRW)
1996-pres	Coordinator, Environmental Engineering Program Graduate Office Space Assignments
1996-pres	Member, Civil & Envir. Engineering Department Instruction and Curriculum Committee
1997	Department Representative, College Promotion and Tenure Committee
1997	Member, Faculty Advisory Committee to College Basic Engineering Renovation Team (BERT)

University Administration and Committee Assignments (cont.):

2000-pres Member, CEE Dept. Assessment Committee
 1998-pres Chair, Civil & Environmental Engineering Dept. Design Committee
 2000 Chair, Post-tenure Cumulative Review Committee (J. Smoot)

Registration and Licenses:

Registered Professional Engineer in Tennessee (8129), Ohio (E-31446), and Virginia (0402/9406).

Professional and Scientific Society Activities, Offices:

1. Chairman, Tennessee Society of Professional Engineers State Education Committee, 1971 and 1972.
2. Vice-Chairman, Southeastern Section ASCE Civil Engineering Division, 1971-1972.
3. Chairman, Southeastern Section ASCE Civil Engineering Division, 1972-1973.
4. Board of Directors, Tennessee Society of Professional Engineers, Knoxville Branch, 1969-present.
5. Chairman, Knoxville, Technical Society/TSPE 1972 Engineers' Week Speakers Bureau Committee.
6. Co-Chairman, National ASCE Specialty Conference, Hydraulics Division, 1972- 1974.
7. Chairman, Conference Session and Discussion group, University Council on Water Resources (UCOWR) Conference, Amherst, Massachusetts, July 1972.
8. V. Chairman, Engineers Week for Knoxville Technical Society, 1973-1974.
9. Education Chairman (State), Tennessee Society of Professional Engineers, 1974.
10. Vice-President, Tennessee Society of Professional Engineers, Knoxville, Tennessee, 1973-1974.
11. President, Tennessee Society of Professional Engineers, Knoxville, 1974-1975.
12. Board of Directors, nominating Chairman, TSPE Knoxville Branch, 1975-1976.
13. ASCE Hydraulics Journal, Abstract reviewer, 1976-present.
14. ASCE, Tennessee Valley Section - Position Paper Author on State Dam Safety, Land use legislation, 1976.
15. Governor's Advisory Committee on State Dams, 1972.
16. State Joint Engineers Action Group (JEAG) Ad Hoc Committee on Dams, 1970-72.
17. Tennessee State Legislative Land Use Planning Task Force, Member by Legislative Act, 88th Assembly, HR244, 1973.
18. West Knox County Homeowners Assoc., Subdivision Repr. , Chairman, Legislative Committee, 1977-78.
19. Chairman, Federal Interagency Committee on Dam Safety (ICODS) 1980.
20. ICODS Subcommittee Members: (1) Interagency Communications, (2) Research.
21. ASCE Dam Safety Task Subcommittee of Water Policy Committee, 1980.
22. Awarded Univ. Wisc/NSF Stipend to attend 13th International Congress on Dams (ICOLD) New Delhi, 1979.
23. Invited Lecturer and Speaker, First John Clark Chair Lecture Series, New Mexico State University, Las Cruces, N.M., Sept. 9- 10, 1980.
24. Lecturer, Multiprotection Design Summer Institute, Flood Protection, Emergency Management Institute, Emmitsburg, Maryland, August 24-28, 1981; July 20-23, 1982; 1985; 1986; 1987.
25. National Academy of Sciences, National Research Council, Committee on Dam Safety, 1981-present.
26. Chairman, Nat. ASCE Water Policy Subcommittee on Dam Safety, 1982-83.
27. Advisor to organizing Committee for Establishment of National Association of State Dam Safety Officials, 1983.
28. Co-host Committee member for 1984 Southeastern States Dam Safety Conference, Knoxville, 1983.
29. Planning Committee, moderator for 1984 National Dam Safety Conference, Denver, 1983.
30. Chairman, ASCE Hydraulics Division, National Task Committee on Microcomputer Software in Urban Hydrology, 1987-89.
31. Member, ASCE Technical Coordination Working Group, Small Dam Standards Committee (SDSC), 1988-.
32. UT Representative: ORNL-TVA-UT Consortia of Research Institutions-Water Resources Initiative Task Force.
33. Member, Planning Committee, Fourth Tenn. Water Resources Symposium, Knoxville, Sept. 10-12, 1991.
34. ASCE Hyd. Journal Paper Reviewer 1990-
35. Fred Pryor Personnel Mgt. Seminar, Sept. 7, 1990, Knoxville, TN.
36. Session Chairman/Moderator, AWRA/TWRA Third Tenn. Water Resources Symposium, Nashville, Aug. 7-9, 1990.
37. Session Chairman/Moderator, ASDSO/FEMA/Tenn. Conference on Dam Safety, Nashville, Nov. 14-15, 1990.
38. Chairman, Advisory Board, Water Quality Project 90s, Repr. H.E. Bittle, Project Manager, 1990-

Professional and Scientific Society Activities, Offices (cont.):

39. Member and Technical Advisor, Central U.S. Earthquake Consortium (CUSEC), Interagency Advisory Group on Seismic Safety of Dams, 1993-pres.
40. ASCE Hydraulics Division Journal Technical Paper Reviewer, 1992-pres.
41. Member, Nat. Acad. of Sciences/NRC Board on Radioactive Waste Mgt., Ward Valley California Committee on Low Level Radioactive Wastes (LLRW), 1993-95.
42. Member, Knox County, Tennessee, Storm Water Advisory Committee (SWAC), 1998-present.
43. Tennessee Urban Runoff Working Group (URWG), 1998-present.
44. Participant in NSF/University of Oklahoma Sooner City Workshop on Integrating Design in the Undergraduate Civil Engineering Curriculum, July 31-August 2, 2000, Norman, Okla.
45. Member, ASDSO Woody Plant and Animal Penetration Committee (1999-present)
46. Member, ASDSO Model Library Committee (2000-present)

Society Memberships:

Member, American Society of Civil Engineers (ASCE)
Member, Sigma Xi
Member, Chi Epsilon
Member, U.S. Committee on Large Dams (USCOLD)
Member, Tau Beta Pi
Member, Association of State Dam Safety Officials (ASDSO)
Member, American Water Resources Assoc. (AWRA)

Consulting Activities - Partial (1970-present):

Engineering consultant and expert witness to several local, regional, and national engineering firms, industries, city/state/federal agencies, citizens groups, private individuals, and attorneys in the area of: flood damage lawsuits; erosion; basement and crawl space water; sediment transport; urban drainage; dam safety, design, and inspection; dam failures; water-related deaths (low-head dams, culverts, etc.); strip mine damage; local drainage ordinances; hydraulic and hydrologic engineering; environmental impact assessments; and policy making.

Partial list of Clients:

Mullins, Nelson, et al, Attorneys, Columbia, S.C	D. Burkhalter, Attorney, Knoxville
PanAm World Services, AEDC, Tullahoma, TN	Olin Chemicals Corp, Charleston, TN
Evans, Ivory & Evans, Attorneys, Pittsburgh, PA	Town of Farragut, TN
Tenn. Dept. of Conservation, Nashville, TN	Environmental Consulting Eng. (ECE), Knoxville, TN
Corps of Engineers, Nashville, TN	J. Batson, Attorney, Knoxville, TN
D. Overton, Attorney, Knoxville, TN	Tenn. Dept. of Transportation, Nashville & Knoxville, TN
Tenn. Office of Attorney General, Nashville & Knoxville	U.S. Geological Survey, Knoxville Office
Executive Office of the President, OSTP, Washington, DC	Federal Emergency Mgmt Agcy (FEMA), Washington, DC
Smithsonian Magazine, Washington, DC	Martin Marietta Energy Sys., Inc., ORNL, Oak Ridge, TN
Big H Mining Co.; S. Jones, Surveyor	W.P. Boone Daugherty, Attorney, Knoxville
B. Bernstein, Attorney, Knoxville, TN	Metropol. Planning Commission (MPC), Knoxville, TN
Economic Devlp. Admin., Bradley & McMinn Counties, TN	T. Seeley, Attorney, Erwin, TN
G.D. Montgomery, Attorney, Knoxville, TN	R. Krieg, Attorney, Knoxville, TN
D. Adams, Engineer, Knoxville, TN	Barge, Waggoner, Sumner, & Cannon, Eng. Knoxville
J. Flynt Engineering, Knoxville, TN	Nashville, TN
Robert Campbell, Engineers, Knoxville, TN	CEI Engineering Associates, Inc., Bentonville, Ark &
R. Neuenschwander, Attorney, Knoxville, TN	Nashville, TN
C. Robertson, Knoxville, TN Crouch & Adams, Consult. Engineers, Oak Ridge, TN	Southern Railroad, Knoxville, TN
Dean F. Kent & Assoc., Consulting Eng., Knoxville, TN	J.W. Baker, Attorney, Knoxville, TN
J. Bell, Attorney, Knoxville, TN	M. Larkin, Attorney, Lansing, MI
R. Jenne, Attorney, Cleveland, TN	T. E. Forgety, Attorney, Dandridge, TN
J. Quinn, Attorney, Laurel, MS.	

Partial list of Clients (cont.):

J. Roach, Attorney, Knoxville, TN
P. Kirthlink, Claims Agent, CNA Insurance, Nashville, TN
S&ME Inc.(Dr. D. Marks, P. E.), Arden, N. C.
R. Koksall, Attorney, Knoxville, TN

Gov. R. Barnes, Attorney, Marietta, GA
Michael Donahue, Attorney, (Stark&Stark) Princeton, NJ
Ellis, Lawhorne & Sims, Attorneys, Columbia, SC

Awards and Honors:

ASCE Student Chapter Faculty of the Year Award (1968).
ASEE Southeastern Section Young Faculty Award (DOW Chemical Award, (1969).
TSPE Young Engineer Award (1970).
Appointed to Governor's Conference on Tennessee Career Education (1972).
Who's Who in the South and Southwest, 16th Edition, 1978-79.
1977 Faculty Achievement Award (UT College of Engineering - \$1,000).
1978 University of Tennessee M.E. Brooks Distinguished Professor Award (\$2,000).
1979 Elected to Tau Beta Pi.
1980 ASEE Western Electric Fund Award for Outstanding Teachers in Engineering in Southeast, (\$1,000).
1980 Univ. of Tennessee Robert Shaw Fulton Engineering Professor Award (\$3,000).
1980-Present, Who's Who in America.
1982-Present, R.M. Condra Distinguished Professor Chair
1985-Civil Engineering Department Outstanding Teacher Award (\$2,000).
1985-Certificate of Appreciation Citations from Director of Federal Emergency Management Agency (FEMA) for "Outstanding Professional Performance and Dedication" as member of Interagency Committee on Dam Safety in (ICODS), (1) Interagency Communication and (2) Research subcommittees, Washington, DC
1986-New Mexico Academy of Civil Engineering in Recognition of Accomplishments and Contributions, Las Cruces, N.M.
1986-President's Award, Association of State Dam Safety Officials, in Recognition of Outstanding Contributions in Dam Safety Programs, Austin, TX.
1988 "Outstanding Living Alumni" honor, one of 100 selected in the College of Engineering, New Mexico State University Centennial
1989-Civil Engineering Department Outstanding Research Award (\$1000)
1991-Civil Engineering Department Outstanding Teaching Award (\$500)
1992-Civil Engineering Department Quality Teaching Award
1993-Outstanding Teacher Award, Civil & Environmental Engineering Dept. (\$1000)
1994-Civil Engineering Department Quality Teaching Award
1995-Civil Engineering Department Quality Teaching Award
1995-College of Engineering, Leon and Nancy Cole Superior Teaching Award for Excellence in Teaching (\$1,000)
1996-Civil & Environmental Engineering Dept. Quality Teaching Award
1996-Civil & Environmental Engineering Dept. Service Recognition Award (\$500)
1997-Civil & Environmental Engineering Dept. Quality Teaching Award
1997-Civil & Environmental Engineering Dept. Research Funding Recognition
1997-Recognized/increased Robert M. Condra Professorship Award
1998-Civil & Environmental Engineering Dept. Quality Teaching Award
1998-Civil & Environmental Engineering Dept. Special Research Recognition
2000-Civil & Environmental Engineering Dept. Teaching Recognition Award (\$500)

Departmental Recovery last five years (1995-1999):

1995 Spring & Fall Total - 39% + 46% = 85% (Ave. = 42.5%)
1996 Spring & Fall Total - 29% + 29% = 58% (Ave. = 29%)
1997 Spring & Fall Total - 29% + 32% = 61% (Ave. = 30.5%)
1998 Spring & Fall Total - 22% + 22% = 44% (Ave. = 44%)
1999 Spring & Fall Total - 38% + 19% = 57% (Ave. = 28.5%)
2000 Spring & Fall Total - 19% + 19% = 38% (Ave. = 19.0%)

Average Annual Recovery for 6-yr period = 32.3%