

LARRY W. CANTER

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Note: This is University-style resume; Dr. Canter retired from the University of Oklahoma on August 16, 2000. Since then, he has worked for Canter Associates, Inc., dba Environmental Impact Training.

EDUCATION:

B.S. (Cum Laude), Civil Engineering, Vanderbilt University, 1961.

M.S., Sanitary Engineering, University of Illinois, 1962.

Ph.D., Environmental Health Engineering, University of Texas, Austin, Texas, 1967.

CURRENT POSITION:

President, Canter Associates, Inc., dba Environmental Impact Training, 1996-present.

GENERAL PROFESSIONAL EXPERIENCE:

Sanitary Engineer, Training Program, Division of Radiological Health, U.S. Public Health Service, Cincinnati, Ohio, October 1962 to January 1965.

Assistant Professor, Department of Civil Engineering, Tulane University, New Orleans, Louisiana, March 1967 to August 1969.

Assistant Professor, School of Civil Engineering and Environmental Science, University of Oklahoma, Norman, Oklahoma, September 1969 to August 1972. Associate Professor, September 1972. Professor, July 1977 to September 1984. Sun Company Professor of Ground Water Hydrology, October 1984 to February 1995.

Director, School of Civil Engineering and Environmental Science, University of Oklahoma, Norman, Oklahoma, September 1971 to August 1979.

Co-Director, National Center for Ground Water Research (Consortium of University of Oklahoma, Oklahoma State University, and Rice University) (September 1979 to February 1992).

George Lynn Cross Research Professor (1993-2000), Sun Company Chair of Ground Water Hydrology (1995-2000), School of Civil Engineering and Environmental Science, and Director, Environmental and Ground Water Institute (1982-2000), University of Oklahoma, Norman, Oklahoma.

Consultant to several U.S. and international industries, governmental groups and engineering firms, 1967-now.

HONORS AND AWARDS:

George Lynn Cross Research Professor, University of Oklahoma, 1993.

Sun Company Professor of Ground Water Hydrology, University of Oklahoma, 1984; and Sun Company Chair of Ground Water Hydrology, 1995.

Outstanding Faculty Achievement in Research, College of Engineering, University of Oklahoma, 1982.

Regent's Award for Superior Accomplishment in Research, University of Oklahoma, 1983.

Regent's Award for Superior Accomplishment in Professional and University Service, 1999.

Co-recipient, "Award for Environmental Excellence in NEPA – 2003", National Association of Environmental Professionals, Annual meeting, June, 2004, San Antonio, Texas (awarded based on SEIS on Steller sea lion protection measures)

Ross-Hulman Award, International Association for Impact Assessment, May, 2009 (for sustained contributions on cumulative effects assessment and EIA methodology)

BOOKS AUTHORED OR CO-AUTHORED:

Have authored, co-authored, or edited 21 books; selected more recent examples include:

1. Knox, R.C., Sabatini, D.A., and Canter, L.W., Subsurface Transport and Fate Processes, Lewis Publishers, Inc., Chelsea, Michigan, 1993, 430 pages.
2. Canter, L.W., Environmental Impact Assessment, Second Edition, McGraw-Hill Publishing Company, Inc., New York, New York, 1996, 660 pages (translated into Spanish, Chinese, Korean, and Malaysian). (Third Edition is in preparation)
3. Canter, L.W., Nitrates in Ground Water, Lewis Publishers, Inc., Boca Raton, Florida, 1996, 263 pages.
4. Clark, E.R., and Canter, L.W., Editors, Environmental Policy and NEPA: Past, Present, and Future, St. Lucie Press, Delray Beach, Florida, 1997, 345 pages.
5. Committee on Valuing Ground Water, Valuing Ground Water, Water Science and Technology Board, National Research Council, National Academy Press, Washington, D.C., 1997, 189 pages (Chairman of Committee).

BOOK SECTIONS OR CHAPTERS:

Have authored or co-authored 37 book sections or chapters; selected more recent examples include:

1. Canter, L.W., Ott, K., and Brown, D.A., "Protection of Marine and Freshwater Resources," Ch. 8 in Sustainable Development: Science, Ethics, and Public Policy, Lemons, J., and Brown, D.A., editors, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1995, pp. 158-214.
2. Canter, L.W., "Scientific Uncertainty and Water Resources Management," Ch. 9 in Scientific Uncertainty and Environmental Problem-Solving, Lemons, J., editor, Blackwell Scientific Publications, Inc., Cambridge, Massachusetts, 1996, pp. 264-297.
3. Canter, L.W., "Scientific Uncertainty and the Environmental Impact Assessment Process in the United States," Ch. 10 in Scientific Uncertainty and Environmental Problem-Solving, Lemons, J., editor, Blackwell Scientific Publications, Inc., Cambridge, Massachusetts, 1996, pp. 298-326.
4. Canter, L.W., "Cumulative Effects and Other Analytical Challenges of NEPA," Ch. 8 in Environmental Policy and NEPA: Past, Present, and Future, Clark, E.R., and Canter, L.W., Editors, St. Lucie Press, Delray Beach, Florida, 1997, pp. 115-137.
5. Canter, L.W., "Environmental Impact Assessment," Ch. 2 in Environmental Engineers Handbook, Liu, D.H., and Liptak, B.G., editors, Second Edition, Lewis Publishers/CRC Press, Boca Raton, Florida, 1997, pp. 41-72.

6. Canter, L.W., "Cumulative Effects Assessment," Ch. 18 in Handbook of Environmental Impact Assessment, Vol. I, Petts, J., Editor, Blackwell Science, Ltd., Oxford, England, 1999, pp. 405-440.
7. Canter, L.W., "Sources, Effects, and Fate of Pollutants," Section 1.1 (in Ch. 1) in Air Pollution, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, pp.3-20.
8. Canter, L.W., "VOCs and HAPs Emissions from Chemical Plants," Section 1.2 (in Ch. 1) in Air Pollution, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, pp.20-23.
9. Canter, L.W., "Macro Air Pollution Effects," Section 1.5 (in Ch. 1) in Air Pollution, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, pp. 36-41.
10. Canter, L.W., "Nature of Wastewater," Section 1.1 (in Ch. 1) in Wastewater Treatment, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, 11 pages.
11. Canter, L.W., "Sources and Effects of Contaminants," Section 1.2 (in Ch. 1) in Wastewater Treatment, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, 12 pages.
12. Canter, L.W., "Characterization of Industrial Wastewater," Section 1.3 (in Ch. 1) in Wastewater Treatment, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, 11 pages.
13. Canter, L.W., "Wastewater Minimization," Section 1.4 (in Ch. 1) in Wastewater Treatment, Liu, D.H., and Liptak, B.G., Editors, Lewis Publishers/CRC Press, Boca Raton, Florida, 2000, 3 pages.
14. Canter, L.W., and Swor, C.T., "Ohio River Mainstream Study – A Cumulative Effects Assessment Good Practice Example", Section 7.2.3 in Lawrence, D., Impact Assessment – Practical Solutions to Recurrent Problems and Contemporary Challenges, Second Edition, John Wiley and Sons, Inc., Hoboken, New Jersey, 2013, pp. 188-190.

PARTICIPATION IN SPONSORED RESEARCH:

In 31 years at the University of Oklahoma, the total research funding received from external sources exceeded \$11.7 million. The total included \$10.5 million for 80 research projects, over \$0.7 million in gifts from private companies via the Ground Water Corporate Forum, and over \$0.5 million in Intergovernmental Personnel Act assignments. Selected examples of more recent research projects include:

1. "Contaminant Identification and Classification," sponsored by the U.S. Environmental Protection Agency, Ada, Oklahoma, 1991-94 (\$180,000).
2. "Risk and the Water Environment: Public Perceptions and Research Needs," National Geographic Society, Washington, D.C., April, 1992, to November, 1992 (\$48,347).
3. "Environmental Training Support for U.S. Postal Service," April, 1995-June, 1997; work negotiated on task order basis; cumulative funding of \$317,543.
4. "Partnership for Air Quality Improvement in South Korea," sponsor is United States-Asia Environmental Partnership via the Oklahoma Department of Commerce; the award period is from September, 1996, to August, 1997; funding of \$32,400.

PUBLISHED PAPERS:

Over 165 papers have been published in refereed journals (over 95) or refereed conference proceedings (77); selected more recent peer-reviewed journal articles include:

1. Lahlou, M., and Canter, L.W., "Alternatives Evaluation and Selection in Development and Environmental Remediation Projects," Environmental Impact Assessment Review, Vol. 13, No. 1, January 1993, pp. 37-61.
2. Canter, L.W., "The Role of Environmental Monitoring in Responsible Project Management," invited paper, The Environmental Professional, Vol. 15, No. 1, 1993, pp. 76-87.
3. Canter, L.W., "Pragmatic Suggestions for Incorporating Risk Assessment Principles in EIA Studies," invited paper, The Environmental Professional, Vol. 15, No. 1, 1993, pp. 125-138.
4. Canter, L.W., and Canty, G.A., "Impact Significance Determination -- Basic Considerations and a Sequenced Approach," Environmental Impact Assessment Review, Vol. 13, No. 5, September 1993, pp. 275-297 (feature article).
5. Arquiga, M.C., Canter, L.W., and Nelson, D.I., "Integration of Health Impact Considerations in Environmental Impact Studies," Impact Assessment, Vol. 12, No. 2, Summer 1994, pp. 175-197.
6. Canter, L.W., Chowdhury, A.K., and Vieux, B.E., "Geographic Information Systems: A Tool for Strategic Ground Water Quality Management," Journal of Environmental Planning and Management, Vol. 37, No. 3, 1994, pp. 251-266.
7. Weems, W.A., and Canter, L.W., "Planning and Operational Guidelines for Mitigation Banking for Wetlands," Environmental Impact Assessment Review, Vol. 15, No. 3, May, 1995, pp. 197-218 (feature article).
8. Raleigh, L.H., Knox, R.C., and Canter, L.W., "Proposed Nonhazardous-Industrial-Waste Classification System," Journal of Environmental Engineering, Vol. 121, No. 5, May, 1995, pp. 402-410.
9. Arquiga, M.C., Canter, L.W., and Robertson, J.M., "Microbiological Characterization of the Biological Treatment of Aircraft Paint Stripping Wastewater," Environmental Pollution, Vol. 89, No. 2, 1995, pp. 189-195.
10. Canter, L.W., and Kamath, J., "Questionnaire Checklist for Cumulative Impacts," Environmental Impact Assessment Review, Vol. 15, No. 4, July, 1995, pp. 311-339 (feature article).
11. Knox, R.C., and Canter, L.W., "Prioritization of Ground Water Contaminants and Sources," Water, Air and Soil Pollution, Vol. 88, No. 3-4, April, 1996, pp. 205-226.
12. Myrlian, N.F., and Canter, L.W., "Indices for Environmentally Compatible Industrial Development Planning: the Example of Moldova," Project Appraisal, Vol. 11, No. 3, September, 1996, pp. 183-194.
13. Burris, R.K., and Canter, L.W., "Cumulative Impacts are not Properly Addressed in Environmental Assessments," EIA Review, Vol. 17, No. 1, January, 1997, pp. 5-18 (feature article).
14. Burris, R.K., and Canter, L.W., "A Practitioner Survey of Cumulative Impact Assessment," Impact Assessment, Vol. 15, No. 2, June, 1997, pp. 181-194.

15. Connick, J.E., and Canter, L.W., "Comparative Analyses of Local Wellhead Protection Programs," Journal of Environmental Systems, Vol. 25, No. 3, 1996-97, pp. 255-285.
16. Canter, L.W., and Clark, E.R., "NEPA Effectiveness -- A Survey of Academics," EIA Review, Vol. 17, No. 5, September, 1997, pp. 313-327 (feature article).
17. Cooper, T.A., and Canter, L.W., "Documentation of Cumulative Impacts in Environmental Impact Statements," EIA Review, Vol. 17, No. 6, November, 1997, pp. 385-411 (feature article).
18. Rumrill, J.N., and Canter, L.W., "Addressing Future Actions in Cumulative Effects Assessment," Project Appraisal, Vol. 12, No. 4, December, 1997, pp. 207-218.
19. Chowdhury, A.K.M.M., and Canter, L.W., "Expert Systems for Ground Water Management," Journal of Environmental Systems, Vol. 26, No. 1, 1997-98, pp. 89-110.
20. Harrington, J.M., and Canter, L.W., "Planning Environmental Monitoring Programs Within the Environmental Impact Assessment Process," International Journal of Environmental Studies, Vol. 55, 1998, pp. 305-331.
21. Pagilla, K.R., and Canter, L.W., "Laboratory Studies on Remediation of Chromium-Contaminated Soils," Journal of Environmental Engineering, ASCE, Vol. 125, No. 3, March, 1999, pp. 243-248.
22. Edwards, A.J., and Canter, L.W., "Impact Indices for Grazing Actions," International Journal of Environmental Studies, Vol. 56, 1999, pp. 571-589.
23. Rumrill, J.N., and Canter, L.W., "Cumulative Air Quality Effects Assessment", Federal Facilities Environmental Journal, Autumn, 2000, pp. 19-38.
24. Atkinson, S. F., Faris, T., and Canter, L. W., "Sea Lions, Fish and Jobs: A Case Study of the Interactions of Policy, Economics and Science", Sustainable Communities Review, Vol. 7, No. 1, 2004, pp. 6-18.
25. Atkinson, S. F., Canter, L. W., and Ravan, M. D., "The Influence of Incomplete or Unavailable Information on Environmental Impact Assessment in the USA", Environmental Impact Assessment Review, Vol.26, Issue 5, 2006, pp. 448-467.
26. Canter, L.W., and Ross, W.A., "State of Practice of Cumulative Effects Assessment and Management; The Good, the Bad, and the Ugly", Impact Assessment and Project Appraisal, Special Issue on Cumulative Effects Assessment and Management, Vol. 28, No. 4, December, 2010, pp. 261-268.
27. Canter, L.W., and Atkinson, S.F., "Adaptive Management with Integrated Decision Making – An Emerging Tool for Cumulative Effects Management", Impact Assessment and Project Appraisal, Special Issue on Cumulative Effects Assessment and Management, Vol. 28, No. 4, December, 2010, pp. 287-297.
28. Atkinson, S.F., and Canter, L.W., "Assessing Cumulative Effects of Projects Using Geographic Information Systems", Environmental Impact Assessment Review, Special Issue on Cumulative Effects Assessment and Management, Vol. 31, No. 5, September, 2011, pp. 457-464.
29. Swor, C.T., and Canter, L.W., "Promoting Environmental Sustainability via an Expert Elicitation Process", Environmental Impact Assessment Review, Special Issue on Cumulative Effects Assessment and Management, Vol. 31, No. 5, September, 2011, pp. 506-514.

30. Canter, L.W., and Atkinson, S.F., "Multiple Uses of Indicators and Indices in Cumulative Effects Assessment and Management", Environmental Impact Assessment Review, Special Issue on Cumulative Effects Assessment and Management, Vol. 31, No. 5, September, 2011, pp. 491-501.
31. Keys, D.L., Canter, L., and Senner, R., "Strengthening the National Environmental Policy Act of 1969", Environmental Practice, Vol. 13, No. 3, September, 2011, pp. 216-226.
32. Canter, L.W., Chawla, M.K., and Swor, C.T., "Expanding Environmental Emphases in Water Resources Planning", Journal of Environmental Assessment Policy and Management, Vol. 15, No. 4, December, 2013, 36 pages.
33. Canter, L.W., Chawla, M.K., and Swor, C.T., "Addressing Trend-Related Changes within Cumulative Effects Studies in Water Resources Planning", Environmental Impact Assessment Review, Vol. 44, January, 2014, pp. 58-66.
34. Canter, L.W., and Ross, W.A., "A Basic Need for Integration – Bringing Focus to the Scoping Process", Impact Assessment and Project Appraisal, Vol. 32, No. 1, March, 2014, pp. 21-22.
35. Swor, C.T., Canter, L.W., and Chawla, M.K., "Sustainability on the Ohio River – A Cumulative Effects Study of Navigation and Ecosystem Needs", Journal of Environmental Planning and Management, (in review)

RESEARCH REPORTS:

Over 160 research reports have been prepared; selected more recent examples include:

1. Canter, L.W., Streebin, L.E., Arquiga, M.C., Carranza, F.E., Miller, D.E., and Wilson, B.H., "Innovative Processes for Reclamation of Contaminated Subsurface Environments," EPA/600/2-90/017, February 1990, Robert S. Kerr Environmental Research Laboratory, U.S. Environmental Protection Agency, Ada, Oklahoma.
2. Knox, R.C., Canter, L.W., Sabatini, D.A., Bell, R., and Paul, D., "Evaluation of Underground Fuel Spill Cleanup Technologies for Selected Navy Site(s)," September, 1992, report to Battelle Research Triangle Park Office, Research Triangle Park, North Carolina.
3. James, T.E., Canter, L.W., Gowda, M.V.R., Davis, L.D., Everett, J.W., Gunn, E.C., Hanks, N.N., and Nelson, D.I., "Risk and the Water Environment: Public Perceptions and Research Needs," November, 1992, report to National Geographic Society, Washington, D.C.
4. Canter, L.W., Knox, R.C., Sabatini, D.A., Vieux, B.E., Shaw, K.M., Chowdhury, A.K.M., Overton, D.R., and Kamath, J., "Ground Water Contaminant Identification and Prioritization," December, 1992, report to U.S. Environmental Protection Agency, Ada, Oklahoma.
5. Canter, L.W., "Environmental Impact Quantification Manual for USAEUR," 3 volumes, January 1993, report to Battelle Research Triangle Park Office, Research Triangle Park, North Carolina.
6. Canter, L.W., Knox, R.C., Sabatini, D.A., Vieux, B.E., Chowdhury, A.K.M., and Connick, J.E., "Expert System for Prioritization of Ground Water Contaminant Sources," November 1993, report to U.S. Environmental Protection Agency, Ada, Oklahoma.
7. Canter, L.W., "Academic Cluster Survey for NEPA Effectiveness Study," December 1994, report to Council on Environmental Quality, Washington, D.C.

8. Canter, L.W., and Sadler, B.M., "A Tool Kit for Effective EIA Practice -- Review of Methods and Perspectives on Their Application," June, 1997, sponsored by the International Association for Impact Assessment.
9. Edwards, A.J., and Canter, L.W., "Qualitative Model for Designing and Implementing Effluent Trading Programs," Working Paper W64, 1998, International Academy of the Environment, Geneva, Switzerland.
10. Canter, L.W., Edwards, A.J., and Szekely, F., "Effluent Trading Programs: Principles, Practices and Possibilities," Working Paper W67, 1998, International Academy of the Environment, Geneva, Switzerland.
11. Canter, L. W., "NEPA Workbench: A First Tier of Websites and Simple Models", July, 2001, submitted to U.S. Army Environmental Policy Institute, Atlanta, Georgia.
12. Canter, L. W., "Cumulative Effects Assessment of the Italian Portion of the Proposed High-Speed Railway from Turin, Italy, to Lyon, France", December, 2001, submitted to Turin-Lyon Intergovernmental Commission of the Ministry of Transport, Rome, Italy.
13. Canter, L. W., "Ground Water Impact Prediction and Assessment for an Environmental Impact Study for a Waterflood Enhanced Oil Recovery Project in Kuwait", February, 2002, submitted to Kuwait Oil Company, Kuwait City, Kuwait.
14. Canter, L. W., contributing author on cumulative effects assessment, "Environmental Impact Statement for the Proposed Idaho Spent Nuclear Fuel Facility at the Idaho National Engineering and Environmental Laboratory", May, 2003, U.S. Nuclear Regulatory Commission, Washington, D.C.
15. Canter, L. W., "Identification and Analysis of U.S. Army Corps of Engineers Policies and Procedures Related to Retrospective Mitigation (Ecosystem Restoration) and Prospective Mitigation", September, 2003, prepared for U.S. Army Corps of Engineers, Pittsburgh District, Pittsburgh, Pennsylvania.
16. Canter, L. W., "Cumulative Effects Assessment of the Eastward Expansion of the Craney Island Dredged Material Management Area (CIDMMA)", April, 2004, submitted to Norfolk District, U.S. Army Corps of Engineers, Norfolk, Virginia.
17. Canter, L. W., and Keys, D. L., "Use of a Training Needs Assessment to Develop a NEPA-focused Training Program", July, 2004, NOAA Fisheries, Southeast Region, St. Petersburg, Florida.
18. Canter, L. W., "National Environmental Policy Act (NEPA) Compliance Options Associated with the Western and Central Pacific Fisheries Convention (WCPFC)", September, 2005, submitted to Pacific Islands Regional Office, NOAA Fisheries, Honolulu, Hawaii.
19. Canter, L. W., contributing author on cumulative effects assessment, Draft Supplemental Environmental Impact Statement for the Construction and Operation of a Battle Area Complex and a Combined Collective Arms Training Facility within U.S. Army Training Lands in Alaska, November, 2005, Ft. Wainwright, Alaska.
20. Canter, L. W., contributing author, "Integrated Report and Draft Programmatic EIS, Ohio River Mainstem Systems Study", May, 2006, Lakes and Rivers Division, U.S. Army Corps of Engineers, Cincinnati, Ohio.

21. Canter, L. W., "What are the Differences Between a Final Environmental Impact Statement (EIS) and a Draft EIS?", March, 2007, Northeast Regional Office, National Marine Fisheries Service, Gloucester, Massachusetts.
22. Canter, L. W., "Guidance Related to the Purpose and Need Section of an EIS", May, 2007, Northeast Regional Office, National Marine Fisheries Service, Gloucester, Massachusetts.
23. Canter, L. W., "Guidance Related to the Summary and Abstract of an EIS", May, 2007, Northeast Regional Office, National Marine Fisheries Service, Gloucester, Massachusetts.
24. Canter, L. W., Chawla, M., and Webster, R. D., "NEPA Analysis Guidance Manual", May, 2007, U.S. Army Environmental Command, Aberdeen Proving Ground, Maryland.
25. Turner, D. R., and Canter, L. W., "The Use of Environmental Indicators for Impact Assessment in Compliance with the National Environmental Policy Act", October, 2007, Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, San Antonio, Texas.
26. Canter, L. W., and Turner, D. R., "Identifying Potential Reasonably Foreseeable Future Actions Related to the Adoption Review of the Yucca Mountain Final Environmental Impact Statement", January, 2008, Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, San Antonio, Texas.
27. Canter, L. W., "Guidance on Describing the Affected Environment in EAs and EISs", June, 2008, Northeast Regional Office, National Marine Fisheries Service, Gloucester, Massachusetts.
28. Canter, L. W., "Guidance on Cumulative Effects Analysis in EAs and EISs", September, 2008, Northeast Regional Office, National Marine Fisheries Service, Gloucester, Massachusetts.
29. Canter, L.W., Chawla, M., and Swor, C.T., "Bibliography on Literature Related to Methods and Technologies for Evaluation of Incremental Changes", 100-Day Deliverable Report, September 4, 2009, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
30. Canter, L.W., Chawla, M., and Swor, C.T., "Foundation Report on Conceptual Models for Evaluating Incremental Changes", 100-Day Deliverable Report, September 14, 2009, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
31. Canter, L.W., and Sadler, B., "Development of a Reference Document on Key Information Sources Related to Cumulative Effects of Multiple Activities on Fish Habitat and Fish Populations in Canada", March 15, 2010, Department of Fisheries and Oceans, Government of Canada, Ottawa, Ontario, Canada.
32. Canter, L.W., Chawla, M., and Swor, C.T., "Review of USACE Institutional Information Related to Evaluation of Incremental Changes in Water Resources Planning", ERDC/CERL TR-11-3, March, 2011, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
33. Canter, L.W., and Sadler, B., "Development of a Prospectus and Agenda for a Bi-National Workshop on an Ecosystem Approach for Assessing and Managing Cumulative Effects on Fish and Fish Habitat Including a Background Discussion Note on Foundational Concepts and Elements of Approach", March, 2011, Department of Fisheries and Oceans, Government of Canada, Ottawa, Ontario, Canada.

34. Sadler, B., and Canter, L.W., "Framework and Approach for Analyzing Case Studies of Cumulative Effects Assessment and Management Good Practice in Fish Habitat/Aquatic Ecosystem Management", March, 2011, Department of Fisheries and Oceans, Government of Canada, Ottawa, Ontario, Canada.
35. Canter, L.W., and Swor, C.T., "Handbook for Cumulative Effects Assessment and Management", Draft, March, 2011, Institute for Water Resources, U.S. Army Corps of Engineers, Alexandria, Virginia.
36. Canter, L.W., Chawla, M.K., and Swor, C.T., "Methods and Technologies for Incorporating Incremental Changes in Water Resources Planning and Management", Deliverable Report, May, 2011, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
37. Canter, L.W., Chawla, M.K., and Swor, C.T., "Incorporating Incremental Changes in Water Resources Planning and Management: Lessons from Case Studies", Deliverable Report, May, 2011, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
38. Canter, L.W., Chawla, M.K., and Swor, C.T., "Analytical Frameworks for Addressing Incremental Changes in Water Resources Planning and Management", Deliverable Report, January, 2012, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
39. Canter, L.W., "Guidance for Addressing Cumulative Impacts Assessment and Management (CIAM) within NRC's Current Initiative on Waste Confidence Rule-Making", August, 2011, prepared for Center for Nuclear Waste Regulatory Analysis, Southwest Research Institute, San Antonio, Texas.
40. Hoagland – Grey, H., Ward, N., Canter, L., and Arneson, N., "Environmental and Social Analysis: Small Hotels and Resorts (Category B)", Technical Note No. IDB-TN-334, November, 2011, Inter-American Development Bank, Washington, D.C.
41. Canter, L.W., Chawla, M.K., and Swor, C.T., "Development and Testing of a Protocol for a Cumulative Effects Assessment and Management (CEAM) Baseline Report", December, 2011, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois (prepared for U.S. Army Alaska, Fort Wainwright, Alaska).
42. Swor, C.T., Chawla, M.K., and Canter, L.W., "Multiple Analytical Frameworks Used for Addressing Incremental Changes in the Ohio River Mainstem System Study (ORMSS)", Deliverable Report, March, 2012, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.
43. Canter, L.W., Sadler, B., and Randall, R.G., "Development of a Reference Document on Key Information Sources Related to Cumulative Effects of Multiple Activities on Fish Habitat and Fish Population in Canada", Canadian Technical Report of Fisheries and Aquatic Sciences 2998, July, 2012, Fisheries and Oceans Canada, Ottawa, Ontario, Canada, 85 pages.
44. Canter, L.W. "Additional Guidance for Addressing Cumulative Impacts Assessment and Management (CIAM) within NRC's Current Initiative on Waste Confidence Rule-Making", August, 2012, prepared for Center for Nuclear Waste Regulatory Analysis, Southwest Research Institute, San Antonio, Texas.
45. Canter, L.W., Chawla, M.K., and Swor, T.C., "Incorporating Physical, Social, and Institutional Incremental Changes in Water Resources Planning and Management", Deliverable Report,

Summary Report, September, 2012, U.S. Army Engineer Research and Development Center – Construction Engineering Research Laboratory (ERDC-CERL), Champaign, Illinois.

46. Canter, L.W., "Cumulative Environmental Risk Assessment and Cumulative Effects Assessment and Management", April, 2013, submitted to ExxonMobil, Houston, Texas, 83 pages.
47. Canter, L.W., Keys, D.L., Senner, R., Hudson, P.E., Deverman, R., and Looney, P., "Knowledge-based Survey for Identifying Best-Practice Principles for Environmental Assessments", Final Report, July 24, 2013, 264 pages, submitted to Council on Environmental Quality, Washington, D.C.
48. Canter, L.W., "Guidance Note on Cumulative Impacts Assessment and Management for Hydropower Development in Indian River Basins", December, 2013, submitted to World Bank, Delhi, India, 104 pages.
49. Canter, L.W., Chawla, M.K., and Swor, C.T., "Incorporating Physical, Social, and Institutional Changes in Water Resources Planning and Management – Lessons from a Review of Case Studies", ERDC/CERL TR-14-8, June, 2014, U.S. Army Construction Engineering Research Laboratory, Champaign, Illinois.

PAPER PRESENTATIONS

More than 360 presentations at national and international conferences and meetings have been made since 1980; selected more recent examples include:

1. Canter, L.W., "Economic Valuation of Ground Water in Remediation Decisions -- Will Benefit/Cost Analysis Be Useful?," Third Annual International Petroleum Environmental Conference: Issues and Solutions in Exploration, Production and Refining, September 24-27, 1996, Albuquerque, New Mexico (keynote).
2. Canter, L.W., "Methods for Cumulative Impact Assessment -- Comparisons and Usage," 17th Annual Meeting of the International Association for Impact Assessment, May 28-31, 1997, New Orleans, Louisiana.
3. Edwards, A.J., and Canter, L.W., "Cumulative Impact Indices for Grazing Actions," 17th Annual Meeting of the International Association for Impact Assessment, May 28-31, 1997, New Orleans, Louisiana.
4. Rumrill, J.N., and Canter, L.W., "Addressing Future Actions in Cumulative Impact Assessment," 17th Annual Meeting of the International Association for Impact Assessment, May 28-31, 1997, New Orleans, Louisiana.
5. Canter, L.W., "Extractive and In-Situ Value of Ground Water -- Categorization and Evaluation Methods," Fourth International Petroleum Environmental Conference, September 9-12, 1997, San Antonio, Texas.
6. Canter, L.W., "Environmental Impact Assessment -- Trends, Needs, and Opportunities," Fourth Interamerican Conference on Environmental Issues, December 8-11, 1997, Caracas, Venezuela.
7. Canter, L.W., "Emerging Methods and Techniques in EIA," Workshop on Emerging Issues in Cumulative Environmental Impact Assessment in the Greater Mekong Subregion, March 23-26, 1998, Manila, Philippines.
8. Webster, R., Ashton, P., and Canter, L.W., "Development of an EIA Workbench," 18th

- Annual Meeting of the International Association for Impact Assessment, April 24-28, 1998, Christchurch, New Zealand.
9. Canter, L.W., "Components of an Integrated EIA Research Strategy," 18th Annual Meeting of the International Association for Impact Assessment, April 24-28, 1998, Christchurch, New Zealand.
 10. Canter, L.W., Edwards, A.J., and Szekely, F., "EIA and Emissions (Discharge) Trading Programs -- An Opportunity for Integrating Development Planning and Management," International Conference on Impact Assessment in the Development Process: Advances in Integrating Environmental Assessment with Economic and Social Appraisal, October 23-24, 1998, University of Manchester, Manchester, England.
 11. Edwards, A.J., and Canter, L.W., "Comparative Review of Effluent Trading Programs," 19th Annual Meeting of the International Association for Impact Assessment, June 15-19, 1999, Glasgow, Scotland.
 12. Edwards, A.J., Canter, L.W., and Szekely, F., "Qualitative Model for Effluent Trading Programs," 19th Annual Meeting of the International Association for Impact Assessment, June 15-19, 1999, Glasgow, Scotland.
 13. Hall, F.E., and Canter, L.W., "Coupled Modeling of the Air Quality Impacts of Chemical Depainting Agents Released from an Industrial Wastewater Treatment Facility," 19th Annual Meeting of the International Association for Impact Assessment, June 15-19, 1999, Glasgow, Scotland.
 14. Canter, L.W., "EIA Educational Models: North American and European Examples," International Symposium on Curricula of EIA, Shanghai Academy of Environmental Sciences, October 27, 1999, Shanghai, People's Republic of China.
 15. Rumrill, J.N., and Canter, L.W., "Cumulative Air Quality Effects Assessment", National Defense Industrial Association, 26th Environmental Symposium and Exposition, March 27-30, 2000, Long Beach, California.
 16. Canter, L.W., "Parallels Between the First Decades of CEA and EIA – Retrospective and Prospective Observations", 20th Annual meeting of the International Association for Impact Assessment, June 19-23, 2000, Hong Kong.
 17. Canter, L.W., "Addressing Cumulative Effect Within Impact Study Documents", 20th Annual Meeting of the International Association for Impact Assessment, June 19-23, 2000, Hong Kong.
 18. Canter, L. W., "Cumulative Effects Assessment", National Federal Program Activities Workshop, U.S. Fish and Wildlife Service, May 6-10, 2002, Scottsdale, Arizona.
 19. McLaughlin, H. O., and Canter, L. W., "USA Case Studies of Good CEA Practices", 22nd. Annual Meeting of the International Association for Impact Assessment, June 15-21, 2002, The Hague, The Netherlands.
 20. Swor, T., Rieger, D., Canter, L., High, W., Hollins, E., Harrell, L. Dodgion, P., and Rife, V., "Cumulative Effects Scoping for a Navigation System Programmatic EIS", 22nd. Annual Meeting of the International Association for Impact Assessment, June 15-21, 2002, The Hague, The Netherlands.
 21. High, W., Hollins, E., Harrell, L., Canter, L., Swor, T., Rieger, D., and Dodgion, P., "An RFFA Matrix for a Navigation System Programmatic Impact Study", 22nd. Annual Meeting

of the International Association for Impact Assessment, June 15-21, 2002, The Hague, The Netherlands.

22. Canter, L. W., "Economics in Cumulative Effects Assessment", Economics and Environmental Conference, U.S. Army Corps of Engineers, New Orleans, Louisiana, July 16-18, 2002.
23. Canter, L. W., "Addressing Cumulative Effects in Marine Fisheries Management", 28th Annual Conference of National Association of Environmental Professionals, San Antonio, Texas, June 22-25, 2003.
24. Canter, L. W., and Swor, C. T., "System Investment Plan as a Tool in Adaptive Management", 83rd Annual Meeting of the Transportation Research Board, Washington, D.C., January 11-15, 2004 (paper included on Compendium of Papers CD-ROM).
25. Canter, L. W., and Swor, T. S., "Environmental Considerations in the Ohio River Mainstem Systems Study", Economics and Environmental Conference, U.S. Army Corps of Engineers, Baltimore, Maryland, April 13-15, 2004.
26. Canter, L. W., and Hollins, E., "Monitoring and Adaptive Management – A Prospective Tool for Environmental Management", presented at the International Association for Impact Assessment (IAIA'05) Theme Forum entitled "The Ohio River Mainstem Systems Study (ORMSS) – A Case Study Illustrating Innovative Approaches", May 30-June 3, 2005, Boston, Massachusetts.
27. Canter, L. W., and Rieger, D., "Cumulative Effects Assessment as the Integral Component of the Programmatic EIS", presented at the International Association for Impact Assessment (IAIA'05) Theme Forum entitled "The Ohio River Mainstem Systems Study (ORMSS) – A Case Study Illustrating Innovative Approaches", May 30-June 3, 2005, Boston, Massachusetts.
28. Swor, C. T., and Canter, L. W., "Potential Applications of the Methods and Approaches Used in this Case Study", presented at the International Association for Impact Assessment (IAIA'05) Theme Forum entitled "The Ohio River Mainstem Systems Study (ORMSS) – A Case Study Illustrating Innovative Approaches", May 30-June 3, 2005, Boston, Massachusetts.
29. Swor, C. T., Canter, L. W., Rieger, D., Hollins, E., and Harrell, L., "Analysis of Environmental Sustainability Needs for the Ohio River Mainstem System Study", presented at the International Association for Impact Assessment (IAIA'05) Theme Forum entitled "The Ohio River Mainstem Systems Study (ORMSS) – A Case Study Illustrating Innovative Approaches", May 30-June 3, 2005, Boston, Massachusetts.
30. Canter, L. W., Hollins, E., and Harrell, L., "Adaptive Management – A Useful Approach for the Ohio River", presented at the Symposium entitled "Charting the Course for Ohio River Adaptive Management" held at the 21st Annual meeting of the Ohio River Basin Consortium for Research and Education, October 26-28, 2005, Huntington, West Virginia.
31. Canter, L.W., "NEPA and Corps Planning – A Continuing Dynamic Environment", U.S. Army Corps of Engineers Southwestern Division Regional Planning Conference, April 11-13, 2006, Corpus Christi, Texas.
32. Sayre, R., Webster, R., Canter, L., and McEnteer, C., "Implementation of New Cumulative Effects Analysis Guidelines on the BAX/CACTF EIS at Donnelly Training Area, Alaska", Range and Training Land Program Symposium – NEPA Sessions, May 9-11, 2006, Chesapeake, Virginia.

33. Canter, L.W., Swor, C.T., Hollins, E., and Harrell, L., "Sustainability Assessment – A Case Study Involving the Process and Response to Resource Needs", 26th Annual Meeting of the International Association for Impact Assessment, May 23-26, 2006, Stavenger, Norway.
34. Tomey, D., Morton, A., Canter, L.W., Gurtman, S., and Anderson, J., "Cumulative Effects Assessment for Marine Fisheries Management Plans", 26th Annual Meeting of the International Association for Impact Assessment, May 23-26, 2006, Stavenger, Norway.
35. Gurtman, S., Canter, L.W., and Thompson, S., "Promoting Sustainability of Marine Fisheries Through Impact Assessment", 26th Annual Meeting of the International Association for Impact Assessment, May 23-26, 2006, Stavenger, Norway.
36. Canter, L. W., "Teaching EIA—From Theory to Practice and Classroom to Internet", 28th Annual Meeting of the International Association for Impact Assessment, May 6-9, 2008, Perth, Australia.
37. Canter, L. W., and Turner, D., "The Integral Role of Indicators in the Practice of EIA", 28th Annual Meeting of the International Association for Impact Assessment, May 6-9, 2008, Perth, Australia.
38. Canter, L. W., and Ross, W. A., "State of Practice of Cumulative Effects Assessment and Management: The Good, the Bad, and the Ugly", Keynote Address, Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
39. Canter, L. W., and Tomey, D., "A Matrix-Based CEA Process for Marine Fisheries Management", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
40. Swor, C. T., and Canter, L. W., "Environmental Sustainability as the Basis for Cumulative Effects Management: A Case Study", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
41. Canter, L. W. "Conceptual Models, Matrices, and Adaptive Management", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
42. Canter, L. W., and Atkinson, S. F., "Environmental Indices and Habitat Suitability Index Models", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
43. Reinke, D. C., and Canter, L. W., "Cumulative Impact Data Management", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
44. Swor, C. T., and Canter, L. W., "Promoting Environmental Sustainability via an Expert Elicitation Process", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
45. Atkinson, S. F., Canter, L. W., and Mangham, W.M., "Multiple Uses of Geographic Information Systems (GIS) in CEA", Assessing and Managing Cumulative Environmental

Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.

46. Canter, L. W., "Using Existing Environmental Management Programs", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
47. Canter, L. W., and Atkinson, S. F., "Adaptive Management and Integrated Decision Making", Assessing and Managing Cumulative Environmental Effects, Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.
48. Canter, L.W., and Sadler, B., "CEAM—Now is the Time to Establish Principles of Best Practice", 29th Annual Meeting of the International Association for Impact Assessment, May 19, 2009, Accra, Ghana.
49. Canter, L.W., Chawla, M., and Swor, T., "Incremental Changes in Water Resources Planning", 30th Annual Conference of the International Association for Impact Assessment, April 9, 2010, Geneva, Switzerland.
50. Canter, L.W., "Future Opportunities", Panel on Why NEPA is not Inherently Self-Defeating, 35th Annual Conference of the National Association of Environmental Professionals, April 28, 2010, Atlanta, Georgia.
51. Keys, D.L., Canter, L.W., and Senner, R.G., "Potential Ways to Strengthen the National Environmental Quality Act of 1969", Panel Session, 36th Annual Conference of the National Association of Environmental Professionals, April 29, 2011, Denver, Colorado.
52. McEnteer, C., Chawla, M., Canter, L., and Swor, T., "Cumulative Effects Assessment and Management", August 18, 2011, Second Annual TSS Workshop, U.S. Army, Dallas, Texas.
53. Canter, L.W., "Cumulative Effects Management – Concepts and Challenges" (energy-related), 32nd. Annual Conference of the International Association for Impact Assessment, May 27-June 1, 2012, Porto, Portugal.
54. Panelist, "Knowledge-Based Survey for Identifying Best Practice Principles for Environmental Assessments", Annual Conference, 37th National Association of Environmental Professionals, May 22-24, 2012, Portland, Oregon.
55. Canter, L., Keys, D., Senner, R., Hudson, P.E., and Deverman, R., "Knowledge-Based Survey for Identifying Best Practice Principles for Environmental Assessments", 57-page paper presented at the 38th Annual Meeting of the National Association of Environmental Professionals, April 2-4, 2013, Los Angeles, California.
56. Sadler, B., and Canter, L.W., "Sharpening CEAM Tools and Methods", Theme Forum – Regional and Ecosystem-Based Approaches in CEAM – A Next Generation Approach, 33rd Annual Conference of the International Association for Impact Assessment, May 11-16, 2013, Calgary, Alberta, Canada.
57. Canter, L.W., Chawla, M., and Swor, C.T., "Analytical Frameworks for Addressing CEAM in Water Resources Planning", Theme Forum – Regional and Ecosystem-Based Approaches in CEAM – A Next Generation Approach, 33rd Annual Conference of the International Association for Impact Assessment, May 11-16, 2013, Calgary, Alberta, Canada.

58. Swor, C.T., Harrell, L., Hollins, E., and Canter, L.W., "Addressing VEC-Related Sustainability in CEAM", Theme Forum – Regional and Ecosystem-Based Approaches in CEAM – A Next Generation Approach, 33rd Annual Conference of the International Association for Impact Assessment, May 11-16, 2013, Calgary, Alberta, Canada.
59. Canter, L.W., and Atkinson, S.F., "CEAM for Endangered Species – The Sonoran Pronghorn", Theme Forum – Regional and Ecosystem-Based Approaches in CEAM – A Next Generation Approach, 33rd Annual Conference of the International Association for Impact Assessment, May 11-16, 2013, Calgary, Alberta, Canada.
60. Canter, L.W., and Sadler, B., "Management of CEs on Fish Habitat and Productivity", Theme Forum – Regional and Ecosystem-Based Approaches in CEAM – A Next Generation Approach, 33rd Annual Conference of the International Association for Impact Assessment, May 11-16, 2013, Calgary, Alberta, Canada.
61. Chawla, M., Swor, C.T., and Canter, L.W., "Watershed-Related Changes and Cumulative Effects", Theme Forum – Regional and Ecosystem-Based Approaches in CEAM – A Next Generation Approach, 33rd Annual Conference of the International Association for Impact Assessment, May 11-16, 2013, Calgary, Alberta, Canada.
62. Canter, L.W., and Swor, C.T., "CEAM for River Diversion Hydropower Projects", 34th Annual Conference of the International Association for Impact Assessment, April 8-11, 2014, Vina del Mar, Chile.

TEACHING AND CONTINUING EDUCATION:

- A. University of Oklahoma
Taught the following University-level courses from 1975 - 2000.
 - . Environmental Impact Assessment (25 times)
 - . Air Pollution Control Engineering (25 times)
 - . Solid Wastes Systems Planning (9 times)
 - . Principles of Air Quality Management (9 times)
 - . Applied Oceanography (coordinator for team-taught course) (3 times)
 - . Ground Water Pollution Control (3 times)
 - . Environmental Administration and Law (3 times)
 - . Advanced Topics in EIA (2 times)
 - . Industrial Hygiene (2 times)
 - . Civil Engineering Design (1 time)
 - . Water and Waste Treatment Processes (1 time)
 - . Environmental Science Problem Solving (1 time - co-taught)
 - . Risk Assessment and Management (1 time)
 - . Technical Communications (1 time)
 - . 47 out of 78 courses taught from spring, 1975, through spring, 2000, on the Statewide Talk-back TV System
- B. Short Courses (selected more recent examples)

Taught environmentally oriented short courses for University of Alabama at Huntsville (1979-1995); courses taught under contract to U.S. Army Corps of Engineers; have taught 2 to 5 sessions annually of a one-week course on Environmental Impact Assessment (1979-1995, and 1999-now); and one session annually of a one-week course on Environmental Quality Planning (1987-1995).

Taught environmentally oriented short courses for the Environmental Training Center, U.S. Army, Ft. Sill, Oklahoma. Taught New Clean Air Act (2 days) and Environmental Law for Non-Attorneys (5 days) in 1993, and Stormwater Management (5 days) in 1994.

Collaborated in the teaching of environmentally oriented short courses at numerous international locations under a variety of sponsorships. Locations have included the following countries -- Argentina, Brazil, Egypt, France, Germany, Greece, Hong Kong, Hungary, Italy, Kuwait, Mexico, Morocco, The Netherlands, Panama, the People's Republic of China, Peru, Saudi Arabia, Scotland, South Africa, Sweden, Syria, Thailand, Turkey, and Venezuela. Sponsors have included, but are not limited to, the Centre for Environmental Management and Planning, University of Aberdeen in Aberdeen, Scotland; World Health Organization; Pan American Health Organization; Stranieri University in Perugia, Italy; and several in-country environmental agencies and organizations.

C. Specialty Seminars and Conferences

Have planned and conducted sixteen 1 to 2 day seminars or conferences on numerous topics; the typical result was the publication of edited proceedings. Selected examples of topical themes include: Ground Water Quality; Microbial Health Considerations of Soil Disposal of Domestic Wastewaters; Abandoned Wells: Problems and Solutions; Disposal of Drilling Wastes; Institutional Capacity for Ground Water Pollution Control; Institutional Coordination for Ground Water Pollution Control; Local Government Options for Ground Water Pollution Control; Ground Water Quality and Agricultural Practices; Liability Issues and Ground Water Pollution Control; Drilling Muds; Agricultural Chemicals and Ground Water Pollution Control; and Hydrological Applications of NEXRAD.

UNIVERSITY SERVICE:

A. University-wide (selected more recent examples)

Faculty Advisory Committee to the President, 1976-78, and 1992-93.

Faculty Senate, 1983-86.

Faculty Senate Executive Committee, 1985-86.

Budget Council, 1985-88.

Provost Search Committee, Chair, 1985-86.

Chair elect, Faculty Senate, 1986-87.

Chair, Faculty Senate, 1987-88.

Chairman, Faculty Senate ad hoc Committee on Non-tenured Faculty Appointments, 1991-92.

Member, Senior Research Centers Guidance Council, 1993-1994.

Faculty representative, Board of Directors, OU Research Corporation, 1994-1995.

B. College of Engineering (selected more recent examples)

Dean's Advisory Committee on Personnel (College of Engineering), 1981-1993, and 1996-1997.

Distinguished Graduates Society Committee -- College of Engineering -- 1995 - 1999.

C. School of Civil Engineering and Environmental Science (selected more recent examples)

Member, Committee A, numerous years between 1979 and 1999.

CEES Director Search Committee, Chair, 1987-88.

Development of joint Master of Environmental Science program (with Oklahoma State University) at the University Center at Tulsa, 1991-1995.

Graduate Liaison and Chair, Graduate Studies Committee, CEES, 1992-1995.

Hosted Dr. N.F. Myrlian as Fulbright Scholar; Dr. Myrlian was from Institute of Geochemical Sciences, Kishinev, Moldova; August-December, 1994.

Periodic participation (for 5□ days) in teaching a 4 week short course on "Financing Water and Wastewater Systems" to a group of 16 Bosnians (course sponsored via funding from USAID and taught at Oklahoma Center for Continuing Education); September and October, 1997.

PROFESSIONAL SERVICE:

A. State-Level (selected more recent examples)

Governor's Coordinating Committee on Water Resources Research, 1980-1992.

Oklahoma Air Quality Control Council, 1986-1999 (Vice Chairman (1989-1999)).

B. National-Level (selected more recent examples)

Associational Memberships:

American Environmental Engineering Professors
International Association for Impact Assessment
National Association of Environmental Professionals
Air and Waste Management Association

Paper reviewer, several peer-reviewed journals, examples include Environmental Professional, Impact Assessment, EIA Review, and Journal of Environmental Engineering, 1970-now.

Book reviewer, McGraw-Hill Book Company (1976-now), Choice Book Journal (1980-1990), Academic Press (1989), Lewis Publishers, Inc. (1992), Van Nostrand Reinhold Book Company (1992), Oxford University Press (1992), Blackwell Scientific Publications, Inc. (1994 and 1995), Holt, Rinehart, and Winston, Publishers (1994), Asian Development Bank (1995), John Wiley (1996), and Routledge Publishers (1997).

Proposal reviewer, U.S. Environmental Protection Agency and National Science Foundation (1980-1990).

Member, Environmental Advisory Board, U.S. Army Corps of Engineers, Washington, D.C., 1983-1989.

Associate Editor, Environmental Professional, peer-reviewed journal published on quarterly basis by National Association of Environmental Professionals, 1985-1989.

Member, Editorial Board, Lewis Publishers, Inc., Chelsea, Michigan, 1985-1993.

Special Review for Council on Environmental Quality -- special invitation to review major CEQ report entitled "Incorporating Biodiversity Considerations into Environmental Impact Assessment Under the National Environmental Policy Act" (CEQ is in the Executive Office of President of the United States), September -October, 1992.

Proposal and research report reviews, several national and international organizations, 1970-now.

Reviewer, "Cumulative Effects Assessment Handbook," prepared by Council on Environmental Quality (CEQ is in the Executive Office of the President of the United States), August-September, 1994-1996.

Special Study for Council on Environmental Quality entitled "Effectiveness and Efficiency of NEPA Implementation -- A Survey of Academic Community Perspectives," (CEQ is in the Executive Office of the President of the United States) September-December, 1994.

Chairman, Committee on Future Value of Ground Water, Water Science and Technology Board, National Academy of Science/National Research Council, Washington, D.C., 1994-1997.

Panel Member (panel of 3 persons), review of environmental research proposals from the Amarillo National Resource Center for Plutonium (the Center is funded by the U.S. Department of Energy through a consortium consisting of the University of Texas System, Texas A and M University System, and Texas Tech University); September 9-10, 1997.

Panel Member (panel of 3 persons), review of proposal for PhD Program in Environmental Science submitted by Arkansas State University in Jonesboro (reviewed on behalf of Arkansas Department of Higher Education); October 7-9, 1997.

Principal Investigator and Committee Member, "Best Practice Principles (BPPs) for Environmental Assessments", Selected Pilot Project to Modernize NEPA Implementation, Council on Environmental Quality, Executive Office of the President, Washington, D.C., October, 2011-July, 2013.

C. International-Level (selected more recent examples)

Co-Editor, Impact Assessment Bulletin, peer-reviewed journal published on quarterly basis by International Association for Impact Assessment, 1983-86.

Board of Directors, Center for Environmental Management and Planning, University of Aberdeen, Aberdeen, Scotland, 1983-87.

Co-Editor, Environmental Impact Assessment Worldletter (bi-monthly publication of University of Oklahoma and University of Aberdeen, Scotland), 1983-88.

International Advisory Board, EIA Review, peer-reviewed journal published on quarterly basis by Elsevier Publishing Company, 1985-now.

Member, U.S. group attending "Issues Identification and Management Workshop," (focused on water resources) in Lisbon, Portugal, June 12-14, 1989 (invited workshop with 5 representatives each from U.S., Portugal, and Brazil).

Member, U.S. group attending Seminar on Hydrology and Water Management of the Amazon Basin, Manaus, Brazil, August 5-9, 1990 (group sponsored by National Science Foundation through grant to Colorado State University).

Member, Program Committee for Eleventh Annual Conference of the International Association for Impact Assessment, held at Champaign, Illinois, June 7-11, 1991.

Member, Scientific Committee for International Symposium on Transboundary River Basin Management and Sustainable Development, held at Delft University of Technology, Delft, Holland, May 18-22, 1992.

Member, 8-person U.S. group attending meeting in Sao Paulo, Brazil, August 5-8, 1991, to discuss with Brazilian colleagues some joint research needs in water resources and environmental engineering; this was in continuation of discussions initiated in Manaus, Brazil, in August, 1990 (group sponsored by National Science Foundation through grant to Colorado State University).

Attended 2-day seminar (December 11-12, 1991) on the development of a book which can be used nationally and internationally by the U.S. Environmental Protection Agency; meeting coordinated by Oak Ridge National Laboratory and held at Oak Ridge, Tennessee; approximately 20 persons invited (10 from U.S. and 10 international).

Member, Nominations Committee, International Association for Impact Assessment, 1993-95.

Member, Awards Committee, International Association for Impact Assessment, 1993-96.

Member, Consultative Expert Group on Environmental Impact Assessment, United Nations Environment Program, Nairobi, Kenya, October, 1993.

On-site review of Bachelor's degree program in environmental engineering, Hong Kong Polytechnic University, June 1994.

Member, Membership Committee, International Association for Impact Assessment, 1996-98.

Member, Program Planning Committee for IAIA '97 Annual Meeting at New Orleans, Louisiana, in May, 1997; International Association of Impact Assessment.

Presented 3-day short course on "Cumulative Effects Assessment" on behalf of the Brazilian chapter of the International Association for Impact Assessment, Sao Paulo, Brazil, October 21-23, 1997.

Presented 3-day short course on "Advanced Topics in EIA" on behalf of the Council for Scientific and Industrial Research (CSIR), Stellenbosch, South Africa, November 17-19, 1997.

Member, Expert Committee on Environmental Health Impact Assessment, Pan-American Health Organization, 1999.

Editorial Board, Impact Assessment and Project Appraisal, International Association for Impact Assessment, 2007-now.

Co-Chair, "Assessing and Managing Cumulative Environmental Effects", Special Topic Meeting, International Association for Impact Assessment, November 6-9, 2008, Calgary, Alberta, Canada.

Co-Editor, Special Issue on Cumulative Effects Assessment and Management, Impact Assessment and Project Appraisal, Vol. 28, No. 4, December, 2010.

Co-Editor, Special Issue on Cumulative Effects Assessment and Management, Environmental Impact Assessment Review, Vol. 31, No. 5, September, 2011.

Presented Seminar on Cumulative Effects Assessment and Management, Inter-American Development Bank, Washington, D.C., December 15, 2011.

In conjunction with Barry Sadler, organized a Theme Forum entitled “Regional and Ecosystem-Based Approaches in Cumulative Effects Assessment and Management (CEAM) – A Next Generation Approach” for the 33rd Annual Meeting of the International Association for Impact Assessment held in Calgary, Alberta, Canada from May 11-16, 2013. The Theme Forum included five sessions and 18 invited topical presentations.