

# Raymond A. Ferrara, Ph.D.

## Principal

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### SUMMARY

Dr. Ferrara has more than thirty years of experience as an educator, scholar and consultant. He holds a doctoral degree from the Massachusetts Institute of Technology, as well as Bachelor's and Master's degrees from Manhattan College. Dr. Ferrara is a former faculty member at both Princeton University and Lafayette College. At Lafayette, he was also Head of the Department of Civil Engineering. The development of Dr. Ferrara's consulting career while a faculty member led to his forming Omni Environmental.

At Princeton and Lafayette, Dr. Ferrara taught graduate and undergraduate courses as well as short courses for practicing professionals, and served on a variety of committees, including a term as Chair of the Curriculum Committee at Lafayette College. He was also actively engaged in research in the areas of water quality modeling, stormwater quality control, and toxic and hazardous chemical fate in ground and surface waters. He has authored numerous consulting reports and scientific publications, and delivered numerous conference presentations and invited lectures. He has served on the editorial boards for the American Society of Civil Engineers *Journal of Environmental Engineering* and the American Water Resources Association *Water Resources Bulletin*. He has served as Chair of the American Society of Civil Engineers Environmental Engineering Division Awards Committee, and is presently Editor for ASCE's *Journal of Environmental Engineering*.

Dr. Ferrara's consulting activities have included providing services to a wide variety of clients in both the public and private sectors. He is well known throughout the United States for his work in solving complex water quality problems in litigation matters involving contamination of ground waters, surface waters, and drinking water supplies. In addition to his litigation experience, Dr. Ferrara has provided expert testimony and advice on matters ranging from the impact of development to planning for wastewater management facilities. He is also widely known for his work in water quality management and NPDES permit matters, and his work is equally respected by both the regulated and regulatory communities.

In addition to his service to the professional community, Dr. Ferrara has also served his local community in a number of capacities including as Chairman of the Board for PlanSmart New Jersey, an independent civic action group committed to improving the quality of community life through sound land use planning and regional cooperation, and as President of his high school Alumni Association (Cathedral Prep, Queens, New York) and co-chair of the school's Capital Campaign.

The details of Dr. Ferrara's professional career are provided in the following pages.

## **EDUCATION**

Ph.D., Environmental Engineering, June 1978  
Massachusetts Institute of Technology  
Cambridge, Massachusetts

M.E., Environmental Engineering, May 1973  
Manhattan College  
Riverdale, New York

B.E., Civil Engineering, May 1972  
Manhattan College  
Riverdale, New York

## **ACADEMIC EXPERIENCE**

### **LAFAYETTE COLLEGE**

#### Faculty Positions:

Civil Engineering Department Head, 1986 - 1989  
Associate Professor, 1987 - 1989  
Assistant Professor, 1984 - 1987

#### Committees and Administrative Positions:

Curriculum Committee  
    Chair, September 1987 - June 1988  
    Member, September 1985 - June 1988  
Economic Status of the Faculty, Member and Secretary, 1987 - 1989  
College Network Committee, 1986 - 1989  
Black Recruitment Advisory Committee, Member and Secretary, 1985 - 1988  
Word Processing Committee, Engineering Division, 1985 - 1986  
Sloan Seminar on "Artificial Intelligence," participant, Spring 1985  
Sloan Seminar on "Water Resources," co-leader, Fall 1985  
Civil Engineering undergraduate adviser, 1985 - 1989  
Career Planning and Placement Office Search Committee for Assistant Director,  
    1986  
Geological Engineering Search Committee, 1986 - 1987

#### Courses Taught:

Water Quality Modeling  
Hydrology  
Special Topics: Toxic and Hazardous Waste in Ground and Surface Waters  
Water Supply and Pollution Control  
Introduction to Engineering Analysis - Computers  
Water Resources and Society  
Independent Study

## **PRINCETON UNIVERSITY**

### Faculty Positions:

Water Resources Program Director, 1983 - 1984  
Assistant Professor, 1979 - 1984

### Committees and Administrative Positions:

Coordinator, Water Resources Program Seminar Series, 1980 - 1984  
Freshman Advising, 1980 - 1983  
Civil Engineering Program Undergraduate Adviser, 1983 - 1984  
Continuing Education Committee, 1981 - 1983  
Geological Engineering Program Committee, 1980 - 1984  
Water Resources Program Committee, 1979 - 1984

### Courses Taught:

Water Quality Modeling and Analysis  
Fundamentals of Water Quality Analysis  
Introduction to Water Pollution Technology  
Surface and Subsurface Hydrology  
Introduction to Technological Challenges

## **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

Research and Teaching Assistant, Department of Civil Engineering, 1974 - 1978

## **RESEARCH ACTIVITIES**

During his academic career, Dr. Ferrara was actively engaged in research in the areas of water quality modeling of pollutant fate and transport, stormwater quality control, and toxic and hazardous chemicals fate in ground and surface waters. His research has been sponsored by the National Science Foundation, the New Jersey Department of Environmental Protection, the Mellon Foundation, the Dodge Foundation, and the Office of Water Policy of the U.S. Department of the Interior. A list of his publications and presentations which reflect his research activity is included in this document.

## **PROFESSIONAL SHORT COURSES**

Dr. Ferrara has also taught the following short courses for professionals at Rutgers University.

*Discharge Monitoring Reports -- From Completion to Compliance*, Cook College, Rutgers University, New Brunswick, NJ, September 24, 1991; October 14, 1992; October 13, 1993; October 6, 1994; October 11, 1995.

*Establishing NPDES Permit Effluent Limitations*, Cook College, Rutgers University, New Brunswick, NJ, October 8 - 9, 1991; October 28 - 29, 1992; September 22 - 23, 1993; September 28 - 29, 1994.

*Surface and Groundwater Quality Evaluation*, Cook College, Rutgers University, New Brunswick, NJ, 1985.

*Hydrologic and Water Quality Assessment*, Cook College, Rutgers University, New Brunswick, NJ, 1985.

*Quantitative Methods for Hydrologic and Water Quality Assessment*, Cook College, Rutgers University, New Brunswick, NJ, May 1984.

## **GOVERNMENT SERVICE**

United States Environmental Protection Agency, Construction Grants Program, 1973 - 1974

## **PROFESSIONAL ASSOCIATION MEMBERSHIPS**

American Society of Civil Engineers  
American Water Resources Association  
American Water Works Association  
Water Environment Federation

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## **PROFESSIONAL ACTIVITIES**

American Society of Civil Engineers, *Journal of Environmental Engineering*,  
Editor, October 1, 2006 - present  
Associate Editor, 1984-1987; 2002 - 2006.

American Society of Civil Engineers, Environmental Engineering Division Awards  
Committee,  
Chair, 1998; Member, 1995 - 1998; 2006 - present

American Water Resources Association, *Water Resources Bulletin*,  
Associate Editor, 1983-1988.

Board of Directors, PlanSmart New Jersey, Trenton, NJ,  
Chairman, 2009  
Member, 2004 - present

Rutgers University Bioenvironmental Engineering Program Industrial Advisory Board  
Member, 2006 - present

Stevens Institute of Technology Environmental Engineering Program Advisory  
Committee, Member, 2001 - 2003

Association of Environmental Authorities, NJPDES Permits Committee,  
Member, 1994 - 1998.

Middle Atlantic Region Civil Engineering Department Chairmen Conference,  
Chair, 1987.

Program Review Panel, National Science Foundation Small Business Innovative  
Research Program, 1987.

Authorities Association of New Jersey, Technical Position Advisory Committee,  
Member, 1983-1987.

Session Coordinator and Chairman, NATO Workshop on Urban Runoff Pollution, Toxic  
Pollutant Impacts to Receiving Waters, Montpelier, France, August 26-30, 1985.

ASCE Water Resources Planning and Management Division, Research and Information  
Committee, Corresponding Member, 1982-1984

Federal Insecticide, Fungicide, Rodenticide Act Scientific Advisory Panel, Ad Hoc  
Member, 1981.

National Science Foundation Research Initiation Grant Program, Program Review Panel,  
1981.

## **CONSULTING EXPERIENCE**

Omni Environmental LLC  
Principal and Founder, 2007 - present

TRC Environmental Corporation  
Senior Vice President, 2004 - 2007

Omni Environmental Corporation  
President and Founder, 1989 - 2004

Environ Corporation  
Principal Consultant, 1987 - 1988

Independent Consultant, 1979 - 1988

Camp, Dresser, McKee/Resource Analysis  
Senior Analyst and Manager of Water Quality Division, 1978 - 1979

## **REPRESENTATIVE AREAS OF PRACTICE**

Water quality modeling and analysis of toxic and conventional pollutants in water resource systems focusing on transport and fate, environmental degradation and assimilation, and distribution of contaminants in such systems.

Modeling and analysis of water distribution systems focusing on contaminant transport and fate, and chemical exposure history at specific locations in distribution systems.

Technical and strategic support for NPDES permits and administrative consent orders, including determination of permit terms and conditions, effluent limitations and compliance schedule requirements.

Watershed management planning including baseline watershed characterization, GIS and database development, identification of watershed priorities, data analysis and development of watershed management strategies.

Preparation and implementation of water quality monitoring programs for model calibration and verification, evaluation of impacts from discharges, and establishment of baseline characteristics.

Wastewater management planning, and wastewater treatment and disposal alternatives assessment.

Preparation of Environmental Impact Statements in connection with land development and other activities.

## **REPRESENTATIVE EXPERT TESTIMONY**

### **Aiello et al. v. Town of Brookhaven (Long Island, New York)**

In this matter, Dr. Ferrara was retained directly by the United States District Court for the Eastern District of New York. Although the plaintiffs and the defendant in this matter provided expert testimony, Dr. Ferrara was asked by the Court to assist it in resolving this case by providing a separate independent expert report and testimony regarding the scientific and engineering issues related to the potential for the Brookhaven Landfill to have impacted ground waters and surface waters in the region.

### **Anderson et al. v. Cryovac, Inc. et al. (Woburn, Massachusetts)**

In this landmark toxic tort litigation, Dr. Ferrara was retained as an expert witness for the plaintiffs to establish the extent to which contaminated drinking water was provided to the residents of Woburn, Massachusetts. His exposure profile was relied upon by medical and toxicological experts to determine whether the plaintiffs were harmed due to consumption of the contaminated water.

### **Renaud et al. v. Martin Marietta Corporation et al. (Denver, Colorado)**

As a result of Dr. Ferrara's credible analyses and presentations on behalf of the plaintiffs in the Woburn case, he was retained on behalf of the defendants in a similar case involving contamination of drinking water in the Denver, Colorado system. Dr. Ferrara's role was to determine the extent to which water from a purportedly contaminated source may have been delivered throughout the Denver drinking water system. He was also asked to testify regarding the fate and transport of contaminants throughout the surface and subsurface environment.

### **Abel et al. v. Lockheed Martin Corporation et al. (Burbank, California)**

In this matter, Dr. Ferrara was asked to render professional opinions concerning the concentrations of organic chemicals in the water delivered to certain locations in the City of Burbank, California beginning in 1940. Dr. Ferrara's work involved reconstructing the historical operation and performance of the systems in question, assessing the concentrations of certain organic chemicals in wells which supplied drinking water from the local aquifers, calculating the transport and fate of these chemicals in the drinking water system, and determining the levels of these chemicals in the water delivered to individual plaintiffs.

### **United States of America v. Tennessee Gas Pipeline Co. (Natchitoches, Louisiana)**

In this case, Dr. Ferrara was asked to testify regarding the frequency, movement and fate of contaminants, particularly PCBs, which may have been released in discharges from a gas compressor station in Natchitoches, Louisiana. Dr. Ferrara's analysis required an understanding of the possible history of releases of PCBs, the mechanisms through which PCBs may have been transported, and the fate of PCBs that may have been discharged from the site.

**E.I. DuPont DeNemours and Company v. Admiral Insurance Company et al. (Niagara Falls, New York)**

For this case, Dr. Ferrara was retained to determine the fate and transport of contaminants, particularly PCBs, in and around a DuPont facility in Niagara Falls, New York. This work involved analysis and understanding of the sources, as well as the distribution and fate of contaminants through this hydrologic system. His work also included an assessment of the need for remediation and the effectiveness of such remediation.

**General Electric Company v. Buzby Bros. Materials Corp et al. (Bellmawr, New Jersey)**

In this case, Dr. Ferrara was retained to assess the extent to which disposal of sewage sludges in a landfill contributed to the need for remediation at the landfill which has been designated as a Superfund site. Dr. Ferrara's testimony required an understanding and analysis of the types of contaminants present in the landfill, the potential for those contaminants to be present in the sewage sludges deposited in the landfill, the interaction of those contaminants with sewage sludges deposited in the landfill, the sources and amounts of sewage sludges deposited in the landfill, and the fate of those contaminants in the landfill and the physical environment under and around the landfill.

**County of Passaic v. MPS Corporation et al. (Sterling Forest, New York)**

In this case, Dr. Ferrara was asked to prepare an expert analysis of the potential for water quality impacts particularly related to stormwater runoff that might result from development of the subject property. The potential for impact to downstream water resources, including a potable water supply reservoir, was of particular concern.

**Technical Oil Products v. Easton Area Joint Sewer Authority (Easton, Pennsylvania)**

In Technical Oil Products' appeal of various penalty assessments and surcharges, Dr. Ferrara was asked to consider the reasonableness of the penalties and surcharges. This effort required that Dr. Ferrara evaluate the facility operation, the Sewer Authority's monitoring of that operation, the validity of the data used to determine penalties and surcharges, and the foundation for the penalty and surcharge calculations.

**Penetone Corporation, et al. v. Amerace Corporation, et al. (Tenafly, New Jersey)**

In this matter, Dr. Ferrara was asked to opine regarding the relationship between three former owner/operators and residual contamination at a chemical manufacturing site. The objective of the effort was to establish allocation among the three parties for the cost of investigation and remediation of environmental contamination at the site.

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**JOURNAL PUBLICATIONS - (peer reviewed)**

Witkowski, P. J., P. R. Jaffe, and R. A. Ferrara, "Sorption and Desorption Dynamics of Aroclor 1242 to Natural Sediments," J. of Contaminant Hydrology, no. 2, p. 249-269, 1988.

Ferrara, R. A. and M. A. Dimino, "A Case Study Analysis for Seasonal Nitrification: Economic Efficiency and Water Quality Preservation," Journal Water Pollution Control Federation, v. 57, no. 7, July 1985.

Griffin, T. T. and R. A. Ferrara, "A Multi-Component Model of Phosphorus Dynamics in Reservoirs," Water Resources Bulletin, AWRA, v. 20, no. 5, October 1984.

Jaffe, P. R. and R. A. Ferrara, "Modeling Sediment and Water Column Interactions for Hydrophobic Organic Pollutants: Parameter Discrimination and Model Response to Input Uncertainty," Water Research, v. 18, no. 9, September 1984.

Jaffe, P. R. and R. A. Ferrara, "Desorption Kinetics in Modeling of Toxic Chemicals," Journal of Environmental Engineering, ASCE, v. 109, no. 4, August 1983.

Ferrara, R. A. and P. Witkowski, "Storm Water Quality Characteristics in Detention Basins," Journal of Environmental Engineering, ASCE, v. 109, no. 2, April 1983.

Ferrara, R. A. and A. Hildick-Smith, "A Modeling Approach for Storm Water Quantity and Quality Control Via Detention Basins," Water Resources Bulletin, AWRA, v. 18, no. 6, December 1982.

Ferrara, R. A. and C. B. Avci, "Nitrogen Dynamics in Waste Stabilization Ponds," Journal Water Pollution Control Federation, v. 5, no. 4, April 1982.

Ferrara, R. A. and D. R. F. Harleman, "Hydraulic Modeling for Waste Stabilization Ponds," Journal of the Environmental Engineering Division, ASCE, v. 107, no. EE4, August 1981.

Ferrara, R. A. and D. R. F. Harleman, "Dynamic Nutrient Cycle Model for Waste Stabilization Ponds," Journal of the Environmental Engineering Division, ASCE, v. 106, no. EE1, February 1980.

**JOURNAL PUBLICATIONS - (not peer reviewed)**

Ferrara, R.A., "The Practicing Professional and the Journal Publication – the Odd Couple or Soulmates?" Editorial, Journal of Environmental Engineering, ASCE, v. 130, no. 5, May 2004.

Ferrara, R. A., "Watershed Management and You - Perfect Together?," New Jersey Effluents, v. 34, no. 3, Summer 2001, and Clean Streams, March 2001.

Ferrara, R. A., T. T. Griffin, and T. S. Nadbielny, "Reservoir Management for Water Supply and Water Quality Objectives," *Current Practices in Environmental Science and Engineering*, v. 2, 1986.

Ferrara, R. A., "Discussion: Dynamic Process Modeling of Wastewater Stabilization Ponds," *Journal Water Pollution Control Federation*, v. 52, no. 10, October 1980.

## **BOOKS AND BOOK CHAPTERS**

Ferrara, R. A., "Toxic Pollutants: Impact and Fate in Receiving Waters," in H. C. Torno, J. Marsalek, M. Desbordes, (eds.), *Urban Runoff Pollution*, Springer-Verlag, Berlin and New York, in cooperation with NATO ASI Series Advanced Institutes Series, 1986.

Ferrara, R. A. and T. T. Griffin, "Round Valley Reservoir Multi-Component Phosphorus Model Documentation," in W. G. Gray (ed.), *Physics-Based Modeling of Lakes, Reservoirs, and Impoundments*, American Society of Civil Engineers, New York, NY, 1986.

Ferrara, R. A., "Modeling Pollutant Transformation Processes," in W. G. Gray (ed.), *Physics-Based Modeling of Lakes, Reservoirs, and Impoundments*, American Society of Civil Engineers, New York, NY, 1986.

Ferrara, R. A., "Introduction to the Modeling of Lakes, Reservoirs, and Impoundments," in W. G. Gray (ed.), *Physics-Based Modeling of Lakes, Reservoirs, and Impoundments*, American Society of Civil Engineers, New York, NY, 1986.

Wood, E. F., R. A. Ferrara, W. G. Gray, G. F. Pinder, *An Introduction to Ground Water Contamination from Hazardous Wastes*, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1984.

## **TECHNICAL REPORTS**

Ferrara, R. A. and D. R. F. Harleman, "A Dynamic Nutrient Cycle Model for Waste Stabilization Ponds," Ralph M. Parsons Laboratory for Water Resources and Hydrodynamics, M.I.T. Department of Civil Engineering, Technical Report No. 237, December 1978.

Harleman, D. R. F., J. E. Dailey, M. L. Thatcher, T. O. Najarian, D. N. Brocard and R. A. Ferrara, "User's Manual for the M.I.T. Transient Water Quality Network Model," EPA-600/3-77-010, Corvallis Environmental Research Laboratory, U. S. Environmental Protection Agency, Corvallis, OR, January 1977.

## **CONFERENCE PROCEEDINGS PUBLICATIONS**

Ferrara, R. A. and L. G. Evrard, "Determining NPDES Permit Limitations for Metals - Pitfalls and Practices," Proceedings of the Preconference Seminar Aquatic Life Criteria for Metals, 66th Annual Water Environment Federation Conference, Anaheim, CA, October 2, 1993.

Ferrara, R. A. and T. T. Griffin, "Model Complexity for Trophic State Simulation in Reservoirs," in T. O. Barnwell and W. C. Huber (eds.), Proceedings of Stormwater and Water Quality Model User's Group Meeting, March 24-26, 1986, Orlando, FL, EPA/600/9-86-023, September 1986.

Ferrara, R. A., "Consideration of Groundwater Pollutant Reactions in Mathematical Modeling," in I. J. Kugelman (ed.), Proceedings of Seventeenth Mid-Atlantic Industrial Waste Conference - Toxic and Hazardous Wastes, Technomic Publishing Co., Inc., Lancaster, PA, 1985.

Jaffe, P. R. and R. A. Ferrara, "The Sediment Water Interface in Modeling Pesticides in Sediment Ponds," in T. Barnwell (ed.), Proceedings of Stormwater and Water Quality Model User's Group Meeting, Gainesville, FL, January 1983, EPA-600/9-83-015, September 1983.

Ferrara, R. A., "The Role of Detention Basins for Stormwater Quality Control," in B. W. Webb, (ed.), Dissolved Loads of Rivers and Surface Water Quantity/Quality Relationships, IAHS Publication No. 141, Proceedings of the IUGG/IAHS Symposium at Hamburg, Federal Republic of Germany, August 1983.

Ferrara, R. A., "Stormwater Detention and Nonpoint Source Pollution Control," Proceedings International Symposium on Urban Hydrology, Hydraulics, and Sediment Control, University of Kentucky, Lexington, KY, July 27-29, 1982.

Ferrara, R. A., P. Witkowski, A. Hildick-Smith, "Pollutant Removal in Stormwater Detention Basins," in W. James (ed.), McMaster University, Proceedings Stormwater and Water Quality Management Modeling Group Meeting, Niagara Falls, Canada, September 28-29, 1981.

Ferrara, R. A., "Mathematical Modeling for Waste Stabilization Ponds: An Assessment," in G. J. Halasi-Kun (ed.), Pollution and Water Resources Columbia University Seminar Series, Vol. XIII, Part 3, 1980.

Ferrara, R. A. and D. R. F. Harleman, "A Dynamic Nutrient Cycle Model for Waste Stabilization Ponds," ASCE National Convention, Boston, MA, April 5, 1979.

**CONFERENCE PRESENTATIONS and INVITED LECTURES (no publication)**

Ferrara, R.A., “Category 1 Waters: Water Quality and Buffer Considerations,” New Jersey Institute for Continuing Legal Education Seminar on “Land Use, Water Quality and the Law,” Voorhees, New Jersey, December 4, 2008 and Woodbridge, New Jersey, July 9, 2008.

Ferrara, R.A. et al., “Applying Science, Legal Techniques and Persistence to get the Appropriate Phosphorus Limit,” New Jersey Water Environment Association Technology Transfer Seminar, Eatontown, NJ, September 30, 2008.

Ferrara, R.A., “Water Quality Management Planning Rule Changes,” New Jersey Water Environment Association Technology Transfer Seminar, Eatontown, NJ, September 29, 2008.

Brake, D., R.A. Ferrara, et al., “Reframing Smart Growth in New Jersey,” 2007 American Planning Association National Planning Conference, Philadelphia, PA, April 17, 2007.

Kilpatrick, J., B. Alberts, R.A. Ferrara, T. Duncan, “Potpourri of Ethics Issues for the Toxic Tort and Environmental Law Attorney,” American Bar Association Toxic Trial & Insurance Practice Section 15<sup>th</sup> Annual Spring Meeting “Science and the Law 2006: A Day in the Life of Toxic Torts and Environmental Law,” Phoenix, AZ, April 8, 2006.

Ferrara, R.A., “Status of Phosphorus Criteria and Permit Limitations,” New Jersey Water Environment Association Technology Transfer Seminar, Tinton Falls, NJ, March 8, 2006.

Ferrara, R.A., “Phosphorus Limits and Compliance,” Joint New Jersey Water Environment Association & Association of Environmental Authorities Session - Regulatory Update, Tinton Falls, NJ, October 19, 2005.

Ferrara, R.A., “TMDLs - Implications for NJ Water & Wastewater Treatment Plants,” New Jersey Water Association Management and Technical Conference, Atlantic City, NJ, September 21, 2005.

Ferrara, R.A., “Environmental Consulting - Principles in Practice,” Environmental Engineering Graduate Program Seminar Series, University of Vermont, Burlington, Vermont, March 18, 2005.

Ferrara, R.A., “The Role of Science in Environmental Litigation,” Environmental Engineering Graduate Program Seminar Series, University of Massachusetts, Amherst, Massachusetts, September 17, 2004.

Ferrara, R.A., “Phosphorus - Background, Current Movements, the Future,” New Jersey Water Environment Association Technology Transfer Seminar, Tinton Falls, NJ, October 30, 2003.

Ferrara, R. A., Moderator for panel on Local Implementation, Burlington County Stormwater Management Conference and Award Program, New Jersey EcoComplex, NJ, May 16, 2003.

Ferrara, R. A., "The Watershed Characterization Report - An Innovative Format," The New Jersey Department of Environmental Protection Watershed Symposium, Trenton, New Jersey, May 14, 2002.

Ferrara, R. A., "Watershed Based Stormwater Management," Burlington County Stormwater Management Conference and Award Program, New Jersey EcoComplex, NJ, April 24, 2002.

Ferrara, R. A., Lecture on Environmental Ethics in Department of Civil Engineering Course on Water Resources, Princeton University, Princeton, NJ, January 8, 2002.

Ferrara, R. A., "Executive Order No. 109 and the Water Quality Management Planning Rules," Morris County Bar Association Land Use Section Meeting, Florham Park, NJ, December 13, 2001.

Ferrara, R. A., "Ecological Litigation and the Business of Ecology," The Business Division of Dominican College, Orangeburg, NY, April 5, 2001.

Ferrara, R. A., "Working with New Jersey's Proposed Watershed Management Rules," New Jersey Institute for Continuing Legal Education seminar entitled "No Sewers - No Development?," New Brunswick, NJ, November 29, 2000.

Ferrara, R. A., "Analysis of New Jersey's Proposed Watershed Management Rules," Maraziti Falcon & Healey seminar on "Facilitating Development and Redevelopment with the New Water Quality and Watershed Management Rules," Newark, NJ, October 27, 2000.

Ferrara, R. A., "Environmental Analysis," AEA Conference on "What Do the Proposed Watershed Planning Rules Mean?," August 4, 2000.

Ferrara, R. A., "Lessons Learned About TMDLs," AEA Conference on "Permit Tips, Trends & Turmoil," Jamesburg, NJ, January 21, 2000.

Ferrara, R. A., "Geographic Information Systems (GIS) for Conservation Planning," Delaware River Watershed-Wide Conference Sponsored by Heritage Conservancy, et.al, Philadelphia, PA, November 17, 1999.

Ferrara, R. A., "Water Quality Standards/Effluent Standards," NJWEA Technology Transfer Seminar, October 26, 1999.

Ferrara, R. A., "The Municipal Permittee Perspective on Whole Effluent Toxicity in NPDES Permits," SETAC Wet Training Course, Hudson Delaware Chapter Fall Meeting, Princeton, NJ, October 1, 1999.

Ferrara, R. A., “Watershed Characterization and the TMDL Process,” New Jersey Watershed Alliance Meeting, Trenton, NJ, January 14, 1999.

Ferrara, R.A., “GIS Mapping Applications for Watersheds,” Association of Environmental Authorities Annual Meeting, Atlantic City, NJ, November 18, 1998.

Ferrara, R.A., “How Will Home Rule & Watershed Planning Work Together?,” Association of Environmental Authorities Legal Seminar, East Windsor, NJ, September 23, 1997.

Ferrara, R.A., “TMDLs and the Watershed Planning Process,” 8th Annual Meeting of the New England Interstate Water Pollution Control Commission, Morristown, NJ, May 20, 1997.

Ferrara, R.A., “Watershed Management and the Total Maximum Daily Loads (TMDLs) Process,” New Jersey American Water Resources Association Conference on Watershed Management: Interdisciplinary Aspects for Planners and Engineers, Rutgers University, Piscataway, NJ, November 6, 1996.

Ferrara, R.A., “Historical Overview: The New Jersey Watershed Picture,” NJDEP/Morris 2000/Morris County Planning Board’s Morris County Watershed Symposium, Convent Station, NJ, May 3, 1996.

Ferrara, R.A., “Alternatives to New Jersey’s Whole Effluent Toxicity Program,” New Jersey Water Environment Association Technology Transfer Seminar, Tinton Falls, NJ, March 25, 1996.

Ferrara, R.A., “Watershed Management,” Rotary Club of Montgomery/Rocky Hill, Blawenburg, NJ, January 11, 1996.

Ferrara, R. A., “Common and Uncommon Problems Affecting Data Quality,” Rutgers University Seminar on “Quality Control and Regulatory Compliance for the Wastewater Lab,” New Brunswick, NJ, December 13, 1995.

Ferrara, R.A., J. Reading, S. Dietrick, “Basic Wastewater Compliance Issues,” 12th Annual New Jersey Environmental Exposition, East Brunswick, NJ, November 29, 1995.

Ferrara, R. A., “Lab Irregularities: Monitoring Interference,” Association of Environmental Authorities Seminar on “Applying Your Laboratory Smarts,” Princeton, NJ, June 5, 1995.

Ferrara, R. A., “Nutrient Management in a Watershed,” New Jersey Water Environment Association Annual Conference, Atlantic City, NJ, May 4, 1995.

Ferrara, R. A., et al., “What’s New With Wastewater,” Atlantic Builder’s Conference, Atlantic City, NJ, March 16, 1995.

Ferrara, R. A., M. A. Dimino, J. C. Hall, D. Gruber, R. K. Johnson, "Metals and NPDES Permits: Issues for POTWs, Industrial Dischargers and Local Industry," Omni Environmental Corporation, Princeton, NJ, January 24, 1995.

Ferrara, R. A., "Proposed Changes in NJPDES Permit Procedures," New Jersey Water Environment Association Central Section Educational Seminar, January 11, 1995.

Ferrara, R. A. and K. Smithyman, "How to Set Reasonable Local Limits Driven by Unreasonable Final Effluent Limits," Local Limits and Water Quality Based Effluent Limits, Pennsylvania Water Environmental Association, Pennsylvania State University, Middletown, PA, October 19, 1993.

Ferrara, R. A., "Unscrambling New Regulations," New Jersey Water Pollution Control Association, 78th Annual Conference, Atlantic City, NJ, May 6, 1993.

Ferrara, R. A., "Permitting & Regulations - A Scorecard for 1993," New Jersey Water Pollution Control Association Central Section, Educational Seminar, Bridgewater, NJ, February 17, 1993.

Ferrara, R. A., "Derivation of Effluent Limitations - The Facts and the Fiction," Water Quality Based Effluent Limits, Water Pollution Control Association of Pennsylvania, Pennsylvania State University, Middletown, PA, January 20, 1993.

Ferrara, R. A., "Strategies for Long Term NJPDES Success," and "Problem Areas Under Existing Rules and Practices" in AEA Workshop on "The Anatomy of a NJPDES Permit," Jamesburg, NJ, June 19, 1992.

Ferrara, R. A., J. F. Cosgrove, Jr., "Proactive Approaches to Water Quality-Based Permitting," Water Pollution Control Association of Pennsylvania, Annual Conference, Pittsburgh, PA, June 14-17, 1992.

Ferrara, R. A., "Your NJPDES Permit - An Overall Approach/Or/Send in the "A" Team...And Don't Forget the Operator," New Jersey Water Pollution Control Association, Annual Conference, Atlantic City, NJ, May 3-8, 1992.

Ferrara, R. A., "Do's and Don'ts - Renewing Your NJPDES Permit Application," New Jersey Water Pollution Control Association Central Section, Educational Seminar, Edison, NJ, April 1, 1992.

Ferrara, R. A., "Factors to Consider in Effluent Derivation, Alternative Methodologies," Water Quality Based Effluent Limitations, Water Pollution Control Association of Pennsylvania, Pennsylvania State University, Middletown, PA, January 21, 1992.

Ferrara, R. A., "Clean Water Regulations," New Jersey Environmental Regulation Conference: 1991, Newark, NJ, October 29-30, 1991.

Ferrara, R. A., "How to Get a Permit You Can Live With," New Jersey Environmental Compliance Management, Institute of Business Law, Secaucus, NJ, October 2, 1991.

Ferrara, R. A., M. A. Dimino, J. Singh, G. T. Tyler, and J. J. Maraziti, Jr., "Science, Law and the NJPDES Permit," Omni Environmental Corporation, Princeton, NJ, June 7, 1991.

Ferrara, R. A., M. A. Dimino, J. Hall, R. Nulman, "A Proactive Approach to NJPDES Permitting," New Jersey Water Pollution Control Association, Atlantic City, NJ, May 16, 1991.

Ferrara, R. A., "Planning for Wastewater Needs," New Jersey Builders Association Annual Convention, Atlantic City, NJ, February 28, 1991.

Ferrara, R. A., "Surface Water Quality Modeling for Wasteload Allocations and Determining Discharge Permit Limitations," in An Introduction to Hydrologic and Water Quality Modeling, Cook College, Rutgers University, New Brunswick, NJ, December 13, 1990.

Ferrara, R. A., "Preparation for Permit Renewal," New Jersey Water Pollution Control Association Education Seminar, Edison, NJ, October 17, 1990.

Ferrara, R. A., M. A. Dimino, J. Hall and E. Kondracki, "The NJPDES Permit Seminar," Omni Environmental Corporation, Princeton, NJ, October 5, 1990.

Ferrara, R. A., "Preparation for Permit Renewal," Authorities Association of New Jersey Legal Seminar, Jamesburg, NJ, September 12, 1990.

Ferrara, R. A., "Surface Water Quality Modeling for Wasteload Allocations and Determining Discharge Permit Limitations," in An Introduction to Hydrology and Water Quality Modeling, Cook College, Rutgers University, New Brunswick, NJ, December 1989.

Ferrara, R. A., and E. Kondracki, "Permit Renewals - Are You Ready?," Authorities Association of New Jersey Annual Meeting, Atlantic City, NJ, November 14-15, 1989.

Ferrara, R. A., Testimony before the New Jersey State Senate Energy and Environment Committee on A-3831, the draft of the Clean Water Enforcement Act, Trenton, NJ, May 4, 1989.

Ferrara, R. A., "Suggested Changes to the NJPDES Permitting Process," Authorities Association of New Jersey Region II Ecological/Environmental Conference, Atlantic City, NJ, April 13, 1989.

Ferrara, R. A., "New Sewage Treatment Plants/Technology and Regulatory Process," New Jersey State Bar Association Seminar, New Brunswick, NJ, December 1, 1988.

Dimino, M. A. and R. A. Ferrara, "Permit Modifications - A Comprehensive Management Approach," Authorities Association of New Jersey, NJPDES Permit Compliance Strategies Workshop, July 26, 1988.

Ferrara, R. A., "Predicting the Fate and Transport of Groundwater Pollutants," Water Pollution Control Association of Pennsylvania Annual Conference, Hershey, PA, June 1987.

Ferrara, R. A., "Stormwater Management and Detention Basins," Lehigh University Civil Engineering Department, Fritz Engineering Research Society Seminar Series, February 1987.

Ferrara, R. A., "Toxic and Hazardous Wastes," National Lafayette Council Retreat/Update, Lafayette College, November 8, 1985.

Ferrara, R. A., P. R. Jaffe, and I. J. Kugelman, "Phosphates and Water Quality: Techniques of Research and Containment," Faculty Research Forum, Lafayette College, November 4, 1985.

Ferrara, R. A., "The Distribution of Toxic and Hazardous Wastes in the Environment," presented to the Lafayette College Chapter of the Society of Sigma Xi, March, 1985.

Ferrara, R. A., "Sorption, Hysteresis, and Reversibility in Groundwater Pollution," Princeton University - Allied Corporation Pollution Control Seminar, Princeton, NJ, October 1984.

Ferrara, R. A., "Groundwater Pollutant Transformation Processes," Princeton University - Allied Corporation Pollution Control Seminar, Princeton, NJ, October 31, 1984.

Ferrara, R. A., "Modeling Hysteresis and Reversibility in Sorption of Organic Chemicals," American Institute of Chemical Engineers, Summer National Meeting, Philadelphia, PA, August 1984.

Ferrara, R. A., "Seasonal Waste Load Allocation Analysis for Stony Brook Regional Sewerage Authority," Authorities Association of New Jersey Spring Meeting, Atlantic City, NJ, April 1984.

Ferrara, R. A., "Modeling the Sorption Process and Its Importance in Determining the Fate of Toxic Organic Chemicals," Seminar presented at the Institute of Hydrology, Wallingford, England, August 4, 1983 and the University of Hannover, Hannover, Federal Republic of Germany, August 15, 1983.

Jaffe, P. R. and R. A. Ferrara, "Sensitivity Analysis for Pesticide Modeling in Sedimentation Ponds Using a Latin Hypercube Sample," AGU Spring Meeting, Baltimore, MD, May 1983.

Ferrara, R. A. and P. R. Jaffe, "Adsorption/Desorption of Organic Chemicals-Implications for Persistence in Natural Water Systems," ASCE Spring Convention, Philadelphia, PA, May 1983.

Ferrara, R. A. and D. B. McLaughlin, "Evaluation of the Advantages and Limitations of Automatic Calibration of a Conceptual Rainfall-Runoff Model," AGU Fall Meeting, San Francisco, CA, December 1982.

Ferrara, R. A., "Stormwater Pollutant Settleability Rates," Stormwater and Water Quality Management Modeling Group Meeting, Ottawa, Canada, October 1982.

Ferrara, R. A., “Pollutant Removal in Stormwater Detention Basins,” Civil Engineering Seminar, McMaster University, Hamilton, Ontario, Canada, April 19, 1982.

Ferrara, R. A., T. S. Nadbielny and T. T. Griffin, “Water Supply and Water Quality Management of Round Valley Reservoir,” ASCE Water Forum ‘81, San Francisco, CA, August 1981, and Water Quality Seminar, Bureau of Systems Analysis and Wasteload Allocations, New Jersey Department of Environmental Protection, October 16, 1981.

Ferrara, R. A., D. R. F. Harleman, and A. Alvarez-Montalvo, “Simulation of Water Quality in the Willamette River Using the M.I.T. Nitrogen Cycle Model,” Symposium on Rate Constants, Coefficients, and Kinetic Formulations in Surface Water Modeling, Concord, CA, February 23-25, 1977.