VITAE

David A. Vaccari, Ph.D., P.E., C.P.E.E.

Associate Professor and Director,
Department of Civil, Environmental, and Ocean Engineering
Stevens Institute of Technology
Hoboken, NJ 07030

PHONE: (201)216-5570 FAX: (201)216-5352
E-Mail: dvaccari@stevens.edu
URL: personal.stevens.edu/~dvaccari/

EDUCATION:

Rutgers University, New Brunswick NJ

1984 -- Ph.D. in Environmental Science.
Thesis: Modeling and Simulation of Compressive Gravity Thickening of Activated Sludge.
1983 -- M.S. in Chemical Engineering.
Thesis: Mean Cell Residence Time in a Nonsteady-State Activated Sludge System.
1979 -- M.S. in Environmental Science.
1974 -- B.S. in Environmental Science.

PROFESSIONAL EXPERIENCE:

Stevens Institute of Technology, Hoboken, NJ
ASSISTANT PROFESSOR -- January 1985 to August 1989
ASSOCIATE PROFESSOR -- September 1989 to present

- Graduate courses taught:
  Mathematical Modeling of Environmental Systems
  Mathematical Methods in Civil and Environmental Engineering
  Fate and Transport of Environmental Contaminants
  Physicochemical Processes for Environmental Control
  Biological Processes for Environmental Control
  Environmental Control Laboratory
  Design and Operation of Pollution Control Processes
  Environmental Chemistry
  Environmental Biology
  Groundwater Pollution (half semester)

- Undergraduate courses taught:
  Introduction to Environmental Engineering
  Environmental Engineering Senior Design
  Computer Methods in Civil Engineering

Engineering Graphics and Computer-Aided-Design
Solid Waste Management
Computer-Aided Manufacturing
Probability and Statistics (recitation)

- Research interests:
  - Modeling of Environmental Processes and Enviroinformatics
    - Gravity thickening of sludge
    - Sludge clarification
    - Advanced Life Support Systems for long-term space travel
    - Hydrologic systems including river stage and geyser behavior
    - Predator-prey relationships
    - Polynomial (nonlinear) modeling of time-series
    - Modeling and optimization of complex integrated systems
  - Biological control processes:
    - Control theory applied to the activated sludge process
    - Modeling of compression in gravity thickening of sludge
    - Long-term biodegradation of solids
    - Flocculation of wastewater
    - Nonlinear time-series analysis of process performance
  - Physicochemical control processes:
    - Air-stripping for removal of Volatile Organic Compounds
    - Solvent recovery from air by scrubbing
  - Pollution transport in the environment:
    - Adsorption hysteresis in groundwater; vadose zone transport of VOCs
  - Electrochemical processes:
    - Lead and copper corrosion by-products in drinking water systems

- Thesis advising:
  - Riyad M.F. Musa Ahmad, Ph.D. “Phenomenological investigation of ozonation of phenol and other organic compounds by the integrated adsorption/oxidation process: kinetics, reactor design and economics” (1991).
  - Stephen T. Boswell, Ph.D. “Membrane air stripping utilizing a plate and frame configuration” (1991).
  - Christos E. Christodoulatos, Ph.D. “System identification for process control of the activated sludge process using multiple regression models” (1991).
  - Maria Kaouris, M.E. “Irreversible Adsorption Hysteresis” (1987).
  - YuHong Jiang, M.E. “Anaerobic digestion of methanol solution in presence of halocarbon compounds” (1991).
  - Russell Ford, M.E., “Development of a model to evaluate the physical and chemical interactions for inorganic substances in packed tower air stripping” (1991).
  - William F. Lavosky, M.E. “Development of a spreadsheet program for groundwater contaminant transport analytical solutions,” (1992).
  - Nicolaos A. Gargoulas, “Biodegradation of cellulose products” (1992).
  - Lauren M. Bradford, M.E., “A leachability study of organics from concrete containing petroleum contaminated soil and fly ash” (1992).

Srinivasan Pongavan, "Use of nonlinear regression techniques for neural network learning," M.E. (1993).
Hossam S. Ezeldin, M.E., "Migration of organics from petroleum contaminated soil solidified in fly ash concrete", (1993).
Kenneth F. Cacossa, Ph.D. "Calibration and validation of a compressive gravity thickening model from continuous and batch experiments" (1994).
Laina Walden, M.E., "Multivariate Polynomial Modeling," (1996).
William Ward, M.E., "An Investigation of the Use of Multivariate Polynomial Regression to Model Stochastic Systems," (1996).
Edward Wojciechowski, M.E., "An Investigation of Artificial Neural Networks for Function Approximation", (1994).
Edward Wojciechowski, Ph.D. candidate, "Identification Of PARX Models With Hydrological And Environmental Applications" (2002).
Patrick Porcaro, M.E. candidate, "Prediction of Activated Sludge Compression Properties from Simple Batch Measurements", (2002).
Russell Ford, Ph.D. candidate, "Multivariable Polynomial Modeling Of Particle Removal In Water Treatment Plants" (2003).
Jay Surti, Undergraduate Senior Thesis, "Simplified Correlations for Compressive Gravity Thickening of Activated Sludge," (2003).
Julie Levri, Ph.D. candidate, "Global Modeling and Optimization of an Advanced Life Support System" (expected, 2007).
ZhaoYan Wang, Ph.D. candidate, "Confidence Intervals and Stability of Multivariate Polynomial Models," (expected, 2007).
Sarath Chandra Jagupilla, Ph.D. candidate.

- Institute Service:
  Program Director, Undergraduate Environmental Engineering (currently)
  Engineering Assessment Committee (currently)
  Director of Assessment, School of Engineering (currently)
  Graduate Curriculum Committee
  Secretary of the Faculty
  Health Insurance Evaluation Committee
  Academic Promotions Committee
  Academic Planning and Resources Committee
  Educational Technology Committee
  Committee on Academic Computing
  Advisor to Undergraduate Environmental Club
- Service to Academic Department:
  Undergraduate Program Coordinator (currently)
  Graduate Program Coordinator
  Developed new Undergraduate Environmental Engineering Curriculum
- Professional Service:
  EcoComplex TMDL Panel, advisory panel to the State of New Jersey Department of Environmental Protection
  IWA Specialist Group on Population Dynamics
  WEF Technical Practice Committee for Wastewater Biology Manual

of Practice
WEF Instrumentation & Computer Applications Committee -- Co-author of Manual of Practice 21: "Instrumentation in Wastewater", Chapter 8: "Automatic Process Control".
Co-editor, special issue of Trans. Instrumentation Society of Am. (1992), with J. Alleman and M. Sweeney
NSF Graduate Fellowship Program Reviewer
US EPA SBIR Program Reviewer
NASA NRA Program Reviewer
AAEE Education Committee, Co-chair 2000 – 2005
AAEE Education Committee, Chair 2005 – 2006
ABET Technology Accreditation Commission, member 2004 – 2006
ABET Accreditation Evaluator for Environmental Engineering and Engineering Technology in Environmental Engineering 1996 – 2008
ABET Board of Directors member (designate) 2009 – 2012
Reviewer for CHOICE Magazine (book reviews for the library profession)
Reviewer of papers for various technical journals including ASCE Envir. Eng. Div Journal, WEF Research Journal, Environmental Engineering Science, Life Support and Biosphere Science, and J. of Marine Science.

- Consulting activities:
  Inventory of Biomass Energy Resources in the State of New Jersey for Public Service Electric and Gas Co.
  Environmental Review of Semiconductor Manufacturing Process using hazardous chemicals, for Town of Dobbs Ferry, NY.
  Modeling of stormwater outfall into the Hudson River, for the Town of Fort Lee, NJ.
  Modeling the impact of ash dispersion in Raritan Bay, for the U.S. Corps of Engineers.
  Evaluation of ecological impacts of dredging, for Rocco Enterprises.
  Evaluation of bacterial pollution, for Rocco Enterprises.
  Environmental Resource Inventory, for the City of Jersey City, New Jersey.
  Evaluation of Wastewater Treatment Process, for the New Jersey School of Conservation.
  Evaluation of Water Quality of Imported Bottled Water, for Erwin Komarow, Inc.
  Study of the effect of tidal fluctuations in groundwater upon groundwater quality, for Rahway Valley Sewerage Authority.
  Development of an Environmental Resource Inventory for the City of Jersey City, New Jersey.
  Evaluation of wastewater treatment plans for a small development, for R.C. Bogart, Inc.
  Risk evaluation and assessment of air stripper emissions, for City of Garwood, NJ.
  Determination of treatability of nonwoven fabric product, for Lehn & Fink Co., Montvale, NJ
  Process selection study for treatment of trichloroacetic acid wastes, for Schering-Plough, Inc.
  Determination of residence time distribution at Blue Plains Wastewater Treatment Plant in Washington, D.C., for Coastal Environmental Services, Inc.

Training of Power Plant Operators in Basic Engineering Sciences, for Sithe Energies.
Determination of effectiveness of septic tank additives.
Leaching of copper in plumbing systems, for the Copper Development Assoc., N.Y.
Biodegradation of Nonwoven Products, for Ahlstrom Corp.
Testing of products for safety towards wastewater disposal systems, Whitehall-Robbins.
Evaluation of stormwater outfall for the former Maxwell House facility, Hoboken, NJ.
Evaluation of Operation and Maintenance at the Caldwell Wastewater Treatment Plant, West Caldwell, NJ.
Development of safe high-energy hydrogen peroxide-powered technology for clearing oil wells, for United Energy, Corp.
Operator Training for Bergen County Utilities Authority
CFD Modeling and Design Improvements for a Secondary Clarifier, Alaimo, Inc.

ReSource Technologies, Inc.
ENGINEERING CONSULTANT -- March 1988 to December 1995

- Responsible for design and testing of packed-column air-stripping equipment for the removal of volatile organic compounds from drinking water.
- Developed correlations of experimental $K_L a$ data and incorporated them into computer programs for design of air-strippers.

Envirosystems Company
PRINCIPAL CONSULTANT -- June 1982 to January 1985

- Development and marketing of software products for unit process simulation and control, and training clients in their use.
- Customizing products to meet needs of clients, and converting software products for different systems. Clients included Merck & Co. and Hoffman La Roche, Inc.
- Conduct training seminars for industrial clients, including Merck & Co. and Reichold Chemical Corp.

Rutgers University
ASSISTANT INSTRUCTOR -- November 1979 to January 1983

- Developed and conducted training courses for water and wastewater treatment plant personnel at the State Operator Training Center.
- Responsible for the development of Activated Sludge Training Simulation Program.
- Developed training manuals for the NJ Dept of Environmental Protection: "Operation and Maintenance of Water and Wastewater Treatment Plants", and "Water Treatment".
- Performed System Manager duties on a DEC PDP-ll/60 computer.

Rahway Valley Sewerage Authority
CHEMIST -- June 1974 to January 1979

- Supervised lab operations and lab technicians.
- Performed chemical analyses, including atomic absorption spectroscopy.

- Assistant Manager of Process Control for a 35 MGD activated sludge plant.

SCIENTIFIC AND PROFESSIONAL SOCIETIES:

Water Environment Federation
    Technical Practice Committee for Wastewater Biology Manual of Practice
    Instrumentation and Control Committee
Association of Environmental Engineering and Science Professors
American Academy of Environmental Engineers
    Engineering Education Committee
    Participation as Accreditation Committee Visitor for ABET
American Water Works Association
International Association of Water Quality
    Specialist Groups on Computing; Environmental Engineering Education; and Microbial Population Dynamics

CERTIFICATIONS AND AWARDS:

Licensed Professional Engineer, New Jersey, 1989
Engineer in Training, New Jersey, 1987
S-4 Wastewater Treatment Plant Operator's License
Stationary Engineer (High Pressure “Blue Seal” Boiler Operator's License)
International Assoc. on Water Quality USA National Committee Founders Award for outstanding paper in *Water Research* by an US author, 1994, (for Christodoulatos & Vaccari, 1993).

PUBLICATIONS

ARTICLES:

Vaccari, D.A., "Detention Time and Suspended Solids Calculations for Step-Feed and Contact Stabilization", *Deeds and Data*, v17, n9, pp. 12-13 (September, 1980).

Vaccari, D.A., T. Fagedes, and J. Longtin, "Mean Cell Residence Time in a Nonsteady-State Activated Sludge System", *Biotechnology and Bioengineering*, v. 27,pp. 695-703, (1985).

Vaccari, D.A., "Solids Flow and Distribution in the Step-Feed Activated Sludge Process", in *Civil Engineering for Practicing and Design Engineers*, v.5, n.10 (1986).

Vaccari, D.A., M. Kaouris, "A Model for Irreversible Adsorption Hysteresis*", J. Env. Sci and Health, Part A -- Env. Sci. and Engg*., 23, 8, (1988).

Vaccari, D.A., A. Cooper, and C. Christodoulatos, "Feedback Control of Activated Sludge Waste Rate", *JWPCF*, v60, n11, p 1979-1985, (1988).

Vaccari, D.A., and C. Christodoulatos, "A Comparison of Several Control Algorithms for Activated Sludge Waste Rate", *Wat. Sci. Tech*. vol 21, pp. 1249-1260, (1989).

Vaccari, D.A., and C.G. Uchrin, "Modeling of Compressive Gravity Thickening of Activated Sludge", *J. Environ. Sci. Health, Part A - Environmental Science and Engineering*, v24, n6, (1989).

"Flyash Concrete Containing Hydrocarbon-Contaminated Soils", A.S. Ezeldin, D.A. Vaccari & R.T. Mueller, Am. Concrete Inst., Special Publications, (1992).

"Stabilization and Solidification of Hydrocarbon-Contaminated Soils in Concrete", A.S. Ezeldin, D.A. Vaccari, L. Bradford, S. Dilcer and E. Farouz, *J. Soil Contam.*, v1, n1, 61-79 (1992).

"Generalized Multiple Regression Techniques with Interaction and Nonlinearity for System Identification in Biological Treatment Processes", D.A. Vaccari and C. Christodoulatos, in *Instrumentation Society of America Transactions*, v31, n1, pp97-102 (1992).

"Concrete solution to solidify soil problems", Ezeldin, A. S., D.A. Vaccari, L. Bradford, S. Dilcer, E. Farouz and R. Mueller, *Soils Analysis, Monitoring, Remediation*, (April 1992).

"Correlations of Performance for Activated Sludge Using Multiple Regression with Autocorrelation", Christodoulatos, C., D.A. Vaccari, *Water Research*, v27, n1, pp51-62 (1993).

"Prediction of Continuous Thickening from A Single Batch Experiment", K. Cacossa and D.A. Vaccari, *Water Science Technology*, v30, n8, pp107-116 (1994).

"Novel Membrane Based Separation and Oxidation Technologies", A.K. Guha, C.H. Yun, P.V. Shanbhag, D. Trivedi, D. Vaccari and K.K. Sirkar, *Waste Management*, v13, p395-401 (1993).

"Emissions from Contaminated Soil Fixed in Concrete", H.S. Ezeldin and D.A. Vaccari, proceedings of GEOENVIRONMENT 2000, New Orleans, LA, February 24-26, 1995.

"Multiphase Ozonolysis of Organics in Wastewater by a Novel Membrane Reactor", A.K. Guha, P.V. Shanbhag, K.K. Sirkar, D.A. Vaccari, D.H. Trivedi, *J. Am. Inst. of Chem. Eng.*, v41, n8, pp1998-2012 (1995).

Christodoulatos, C., D.A. Vaccari, G.P. Korfiatis, S. Baumik, K. Davies, and T.-L. Su, "Nutrient Recovery and Biodegradation of Inedible Tomato plant Residues by Activated Sludge Cultures and Phanerochaete Chrysosporium," Life Support and Biosphere Science, vol. 5 pp. 53-61 (1998).

Levri, J., K. Davies, D.A. Vaccari, C. Christodoulatos, T.-L. Su, "Modeling Long-Term Biodegradation of Inedible Plant Material", SAE Technical Paper Series 981819, (1998).

Russell, J., R.M. Cowan, D.A. Vaccari, "Modeling Ammonia Removal in Biofilters", SAE Technical Paper, (1998).

Vaccari, D.A. and J. Levri, "Multivariable Empirical Modeling of ALS Systems Using Polynomials," Life Support and Biosphere Science, vol. 6 pp. 265-271, (1999).

"Polynomial Time-Series Modeling of Predator-Prey Population Dynamics", D.A. Vaccari and L. Walden, in preparation (2000).

"Air Stripping Correlation for Structured Packing", D.A. Vaccari and C. Zelin, in preparation, (2000).

Wojciechowski, E., D. A. Vaccari, Identification of Multivariate Polynomial Autoregressive Models of Geohydrologic Time-Series, submitted to Water Resources Research, 2001.

Levri, J., and D.A. Vaccari, "Model Implementation for dynamic computation of system cost for advanced life support," *Advances in Space Research*, Space Life Sciences: Life Support Systems and Biological Systems under Influence of Physical Factors, Vol 34/7 pp 1539-1545 (2004).

Vaccari, D.A., A Comprehensive Course in Environmental Biology, Proceedings of the ASEE Annual Conference, Chicago, IL, 2006.

Vaccari, D. A. and Wang, H. -K., "Multivariate polynomial regression for identification of chaotic time series," Mathematical and Computer Modelling of Dynamical Systems, 13:4, 395 – 412, 2007.

Vaccari, D.A., "Confounded Assessment – When Direct Measures Don't Measure Outcomes," *Assessment in Education: Principles, Policy & Practice* (submitted).

Wang, Z., D.A. Vaccari, and M. Levandowsky, "Development of a probability response surface for phytoplankton using multivariate polynomial models," *Environmental Modeling* (submitted).

Jagupilla, S.C.K., D. A. Vaccari, R. I. Hires, "Using Multivariate Polynomial Regression for Fecal Coliform Source Inferences," *Water Research* (submitted).

Jagupilla, S.C.K., D.A. Vaccari, R.I. Hires, "The Relation of Trends in Fecal Coliform Concentrations in a CSO Impacted River to Their Sources," *Water Practice* (submitted).

Jagupilla, S.C.K., D.A. Vaccari, R.I. Hires, "Improved Statistical Rollback Method For Total Maximum Daily Load," (in preparation).

Vaccari, D.A., A. Ritter, "Effect of teaching biological systems modeling upon performance in math and engineering courses," (in preparation).

Porcaro, P., J. Surti and D.A. Vaccari, "Correlations For Compressive Gravity Thickening And Application To Predicting SVI," (in preparation).

Vaccari, D.A., "Phosphorus: A Looming Crisis," *Scientific American*, v300, n6, pp 54-59 (June, 2009).

CONFERENCE PRESENTATIONS AND PROCEEDINGS:

"Recent Developments in Activated Sludge", The Chinese-American Academic and Professional Association Yearbook (1985).

"Calculation of Mean-Cell-Residence-Time in Unsteady-State Activated Sludge Processes", presented at the IAWPRC Workshop on Instrumentation and Control of Water and Wastewater Treatment and Transport Systems, Houston, TX, April (1985).

"Civil Engineering Education in a Computer-Intensive Environment", with K.N. Derucher, presented at the Microcomputers in Civil Engineering Conference, Orlando FL, November 1986.

"Feedback Control of Activated Sludge", with A. Cooper, Poster Session presented at the Water Pollution Control Federation Annual Conference, Los Angeles, CA, October 1986.

"Irreversible Adsorption Hysteresis in Columns", with M. Kaouris, in Proc. of the 1987 Specialty Conference, Environmental Engineering, Orlando, FL, ASCE, July 6-8, 1987.

"Feedback Control of Activated Sludge", with A. Cooper and C. Christodoulatos, presented at the Water Pollution Control Federation Annual Conference, Philadelphia, PA, October 1987.

"Activated Sludge Simulation on Microcomputers for Design, Operations, and Training" presented at the 5th National Microcomputers in Civil Engineering Conference, Orlando FL, November 1987.

"Modeling Hysteretic Adsorption-Desorption", presented at the International Conference on Physicochemical and Biological Detoxification of Hazardous Wastes, Atlantic City, NJ, May 3-5 (1988).

"Soil Decontamination by Electro-osmotic Applications", with G.P. Korfiatis and V. Montanti, presented at the International Conference on Physicochemical and Biological Detoxification of Hazardous Wastes, Atlantic City, NJ, May 3-5 (1988).

"A Comparison of Several Control Algorithms for Activated Sludge Waste Rate", with C. Christodoulatos, IAWPRC Biennial Conference on Water Pollution Control, Brighton, UK, July 1988.

"A Computer-Aided-Design and Task-Task Communications Pre- and Post-processor for the Konikow-Bredehoft Groundwater Model", with C. Christodoulatos, presented at Envirosoft 88, Porto Carras, Greece, September 27-29, 1988.

"Performance Correlations and Dynamic System Evaluation for the Activated Sludge Process", presented at the WPCF Annual Conference, San Francisco (1989).

"Modeling of Batch Thickening of Activated Sludge", D.A. Vaccari, presented at the 1990 National Conference on Environmental Engineering, Arlington, VA, July 8-11, 1990.

“Modeling of Batch Thickening with Compressive Models,” D.A. Vaccari and C.G. Uchrin, Proceedings of the ASCE Conference on Environmental Engineering, pp 117-124, Washington, DC, 1990.

"Measurement of Monod Parameters in Operating Activated Sludge Plants", with C. Christodoulatos, presented at the IAWPRC conference on Instrumentation and Control, Yokohama and Kyoto, Japan, August 1990.

"Concrete with Hydrocarbon Contaminated Soils as Fine Aggregate: Setting Time and Strength", with A.S. Ezeldin, R.T. Mueller, S. Dilcer, E. Farouz, ACI Spring Convention, Boston, MA, March 1991.

"Factors Affecting Lead Corrosion Byproduct Formation: Field and Laboratory Studies", with R. T. Mueller, AWWA Annual Conference, Philadelphia PA, June 1991.

Stabilization and Solidification of Hydrocarbon Contaminated Soils in Concrete, A.S. Ezeldin, D.A. Vaccari L. Bradford, S. Dilcer, E. Farouz, and R. Mueller, presented at the 6th Annual Conf. on Hydrocarbon Contaminated Soils, Sept 23-26, 1991, Amherst, MA.

Use of Petroleum Contaminated Soils in Asphalt Concrete, N. Meegoda, D.A. Vaccari, D.R. Huang, B. DuBose, Y. Chen, and R. Mueller, presented at the 6th Annual Conf. on Hydrocarbon Contaminated Soils, Sept 23-26, 1991, Amherst, MA.

"Automatic Process Control", presented at a workshop on "Instrumentation in Wastewater Treatment", at the annual conference of the Water Pollution Control Federation, October 1991, Toronto Canada.

"Flyash Concrete Containing Hydrocarbon-Contaminated Soils", A.S. Ezeldin, D.A. Vaccari & Mueller, Am. Contrete Inst., Special Publications, presented at Fourth Canmet-ACI Int'l Conf. on Flyash, Silica Fume, Slag and Natural Pozzolans in Concrete, Istanbul, Turkey, May 3-8 (1992).

"A Novel Membrane Reactor for Degradation of Hazardous Organics", A.K. Guha, D.A. Vaccari and K.K. Sirkar, presented at AIChE annual meeting, Los Angeles, CA, November 1991.

"A Novel Membrane Reactor for Degradation of Hazardous Organics", P. Shanbhag, A.K. Guha, D.A. Vaccari and K.K. Sirkar, presented at the Fifth annual meeting of North American Membrane Society, Lexington, KY in May 1992.

“Cellulose Biodegradation in Anaerobic Systems”, C. Christodoulatos, D.A. Vaccari, N. Gargoulas, and T.-L. Su, in Technical Proceedings, CIB/WB2 International Symposium, Washington, DC, September 1992.

"Membrane Air Stripping Utilizing a Plate and Frame Configuration", Boswell, S.T. and D.A. Vaccari, presented at the 21st Annual Conference of the ASCE Water Resources Planning and Management Division, Denver, Colorado, May 1994.

"Spatial Distribution of Lead in Plumbing Systems" D.A. Vaccari, S. Pongavan, T. Konen, presented at the Am. Water Works Assoc. 1994 Annual Conf., New York, NY, June 1994.

"Neural Networks as Function Approximators: Teaching A Neural Network to Multiply", E. Wojciechowski, D.A. Vaccari, presented at the IEEE World Congress on Computational Intelligence, Orlando, FL, June 1994.

“Nonlinear Analysis of Retail Performance”, D. A. Vaccari, IEEE/IAFE Conference on Computational Intelligence for Financial Engineering, New York, NY, March 24-26, 1996.

"Prediction of Continuous Thickening from A Single Batch Experiment", K. Cacossa and D.A. Vaccari, presented at the IAWQ Biennial Conf., Budapest, Hungary, July 1994.

“Emissions from Contaminated Soil Fixed in Concrete”, H.S. Ezeldin and D.A. Vaccari, presented at GEOENVIRONMENT 2000, New Orleans, LA, February 24-26, 1995.

“Remediation and Reuse of Chromium Contaminated Soils through Cold-Top Ex-situ Vitrification”, Meegoda, J. B. Librizzi, G.F. McKenna, W. Kamolpornwijit, D. Cohen, D.A. Vaccari, S. Ezeldin, L.Walden, B.A. Noval, R.T. Mueller, S.Santora, The 27th Mid-Atlantic Industrial and Hazardous Waste Conference, Lehigh Univ., Bethlehem, PA, July 9-12, 1995.

“Predicting Process Performance with Polynomials”, D.A. Vaccari and E. Wojciechowski, WEF Specialty Conf. “Automating to Improve Water Quality”, Minneapolis, MN, June 25-28, 1995.

“Nonlinear Control of a Wastewater Treatment Plant Using Multivariate Polynomial Models”, D.L. McMahon, S.L. Rivera and D.A. Vaccari, presented at the 1995 AIChE Annual Meeting, Miami Beach, FL.

Vaccari, D.A. and L.A. Levri, “Multivariable Empirical Modeling of Complex Integrated Systems,” Biospherics and Life Sciences Conference, Orlando, FL (January, 1998).

Vaccari, D.A., and L. Walden, "Polynomial Time-Series Modeling of Predator-Prey Population Dynamics", presented at the Int'l. Soc. Of Ecological Modeling Conf., Baltimore MD (August 1998).

Levri, J., K. Davies, D.A. Vaccari, C. Christodoulatos, T.-L. Su, "Modeling Long-Term Biodegradation of Inedible Plant Material", presented at the 28th International Conference on Environmental Systems, Danvers, MA (July 13-16, 1998).

Vaccari, D.A., "Real and Artificial Intelligence in Water Treatment Plants", presented at the Research Committee of the New Jersey Section of the American Water Works Association, (June, 1998).

Russell, J.F., R.M. Cowan, J.A. Joshi, D.A. Vaccari, "Modeling Ammonia Removal in Laboratory Scale Biofilters", 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 20-23, 1999.

Wojciechowski, E., and D.A. Vaccari, "Techniques to Avoid Pitfalls in Empirical Modeling", 29th Int'l Conf. On Environmental Systems, Denver, CO, July 12-15, 1999.

Davies, K., C. Christodoulatos, D.A. Vaccari, G. P. Korfiatis, "Biologically Mediated Solids Degradation and Nitrogen Recovery on Inedible Tomato, Peanut, and Wheat Plant Residues" , 29th Int'l Conf. On Environmental Systems, Denver, CO, July 12-15, 1999.

Davies, K., C. Christodoulatos, D.A. Vaccari, G. P. Korfiatis, "Micronutrient Recovery from Inedible Tomato, Peanut, and Wheat Plant Residues in Activated Sludge Cultures and Phanerochaete chrysosporium", 29th Int'l Conf. On Environmental Systems, Denver, CO, July 12-15, 1999.

Levri, J., D. A. Vaccari and A. E. Drysdale, Theory and Application of the Equivalent System Mass Metric, 30th Int'l Conf. On Environmental Systems, Toulouse, France, July, 2000.

Porcaro, P. and D. A. Vaccari, "Correlations For Compressive Gravity Thickening And Application To Predicting SVI," Water Environment Federation Conference, Atlanta, GA, October, 2001.

D.A. Vaccari, Zhaoyan Wang, J. Cavazzoni, K. Kumasaka, "Modeling CO_2 Uptake In Soybean Plants Using Multivariate Polynomial Regression," presented at the American Society for Gravitational Biology and Space Science Conf., Alexandria, VA, November, 2001.

D.A. Vaccari and Z. Wang, Computing Confidence Intervals In Multivariate Polynomial Regression, presented at the NASA Biospherics PI Conference, Galveston, TX, January 2003.

Zhao-Yan Wang, David A. Vaccari, M. Levandowsky. Nonlinear Multivariate Analysis of Phytoplankton Species in the Lower Hudson River, 1996-2003. Poster presentation, Northeast Algal Symposium, Groton CT. 2004

Z. Wang, D.A. Vaccari, M. Levandowsky. Multivariate Polynomial Modeling of Phytoplankton in the Lower Hudson River. Platform presentation, American Society of Limnology and Oceanography, summer meeting, Savannah Georgia, 2004.

Vaccari, D.A., Sampling Student Performance, A Direct Measure for ABET Assessment, presented at the Mid-Atlantic Regional ASEE Section Spring 2005 Conference, Fairleigh Dickenson University, Teaneck, NJ (2005).

Vaccari, D.A., "Automatic Process Control," for the WEF Manual of Practice 21, workshop presentation at WEFTEC 2005, Washington, D.C., 2005.

Vaccari, D.A., and D. Kinnear, "Incorporating Compressive Effects into the Design of Secondary Clarifiers – Comparing Compressive Approaches with Flux Approaches," WEFTEC.06 Workshop: Clarification in Wastewater Treatment Facilities – State of the Art, Dallas, TX, October 2006.

Vaccari, D.A., "Confounded Assessment – When Direct Measures Don't Measure Outcomes," proceedings of Best Assessment Processes IX, Terre Haute, IN (2007).

Vaccari, D.A., and M. Levandowsky, "Phytoplankton in a Turbulent, Turbid Environment: The Lower Hudson and East Rivers," poster presented at the 2007 Meadowlands Symposium, May 2007.

Jagupilla, S.C.K, D.A. Vaccari, R.I. Hires, "Pollutant Source Behavior Analysis Using GIS-based Tools for the TMDL Process", The Third International Conference on Environmental Science and Technology, Houston, TX, August 6-9, 2007.

Jagupilla, S.C.K, D.A. Vaccari, R.I. Hires, "The Relation of Trends in Fecal Coliform Concentrations in a CSO Impacted River to Their Sources," WEFTEC, San Diego, CA (2007).

Vaccari, D.A., "The Limiting Factor, The problem of phosphorus resources, What we can do about it, why we won't," Bioethics Symposium, Stevens Institute of Technology (April 2008).

Jagupilla, S.C.K., D. A. Vaccari, R. I. Hires, "Improved Statistical Rollback Method For Total Maximum Daily Load," Protection and Restoration of the Environment IX, Argostoli, Greece (June, 2008).

Vaccari, D.A. "Local and regional challenges to global resource issues," Sustainable Loudoun County (VA) Energy Summit, George Washington University (November 14, 2008).

REPORTS AND MANUALS:

"Operation and Maintenance of Water and Wastewater Treatment Plants", for the New Jersey Dept of Environmental Protection, State Operator Training Center, 1982.

"Water Treatment", for the New Jersey Dept of Environmental Protection, State Operator Training Center, 1982.

"User's Manual for the Envirosystems Activated Sludge Simulation Program", 1983.

"Biomass Energy Resource Potential in the State of New Jersey, Part I -- Resource Inventory Cataloged by County", for PSE&G, June 1985.

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