

PAUL DAVID ROBILLARD

Education

- PH.D. Biological and Environmental Engineering, Cornell University
• Research focus: Watershed Monitoring and Control Systems
- M.S. Resource Economics, Cornell University
• Research focus: Nonstructural Flood Control Methods
- B.S. Civil Engineering, University of Notre Dame
• Concentration: Water Resources Engineering
- Foreign Language: Spanish (Foreign Service Institute (FSI) rating of 3 (5))

Professional Experience

- EXECUTIVE DIRECTOR: World Water Watch, 2003-present
Watershed monitoring and control systems in support of water supply; surface and groundwater quality protection and restoration; and community conservation programs.
- DIRECTOR: Center for AI in Water Quality Control Systems, Environmental Resources Research Institute, Penn State University, 1996-2003. Lead team of researchers and graduate students in watershed water quality research and outreach programs.
- ASSOCIATE PROFESSOR: Penn State University, Agric. and Biological Engineering, 1993-2003
Knowledge-based systems applications for water quality control processes
- FULBRIGHT SCHOLAR: Council for the International Exchange of Scholars and the J. William Fulbright Commission, 95-96. Research and lecturing on "Design of Water Quality Monitoring Networks" with primary applications for ecological reserves in Ecuador
- VISITING PROFESSOR: Dept. of Civil and Environmental Engineering, Tufts University, 95-96
Integration of hydrologic models and statistical methods into expert systems software
- ASSISTANT PROFESSOR: Penn State University, Agric. and Biological Engineering, 87-93
Watershed monitoring and control systems for surface and groundwater quality
- RESEARCH ASSOCIATE: Cornell University, Agricultural Engineering, 1986-1987
Watershed monitoring and evaluation applications
- RESEARCH ENGINEER: Cornell University, Agricultural Engineering, 1977-1985
Design and operation of laboratory and field experimental research methods for water quality monitoring and control systems
- TEACHING AND RESEARCH ASSISTANT: Cornell University, 1973-1976
Conducted research relating to nonstructural flood control measures.
- INSTRUCTOR: Wardlaw School, Plainfield, New Jersey, 1970-1971
Teacher of mathematics, spanish and mechanical drawing at the high school level
- CIVIL ENGINEER: Peace Corps/Ecuador, 1968-1970
Design and construction of potable water systems and irrigation distribution systems
- ENGINEERING INTERN: Fay, Spofford and Thorndike, Boston, Massachusetts, summer 1967

Awards and Honors

2001 W. Lamar Kopp Award, Pennsylvania State University. Awarded annually to one faculty member in the 23 campus Penn State system for international contributions
1995-96, Fulbright Scholar, Council for the International Exchange of Scholars
1994 National Gunlogson Engineering Award, The Society for Engineering in Agricultural, Food, and Biological Systems for career contributions in water resources engineering
1990 and 1993 National Software Awards, The Society for Engineering in Agricultural, Food, and Biological Systems (for Drinking Water Solutions (DWS) software system (93) and Computer-Aided Water Well Design Instruction Modules (90)
1993-Present, National Expert and Advisor, South Florida Water Management District
1987-93, Advisor to USDA-EPA National Rural Clean Water Program
1992-93, Technical Advisor to NOAA-EPA-USDA Coastal Zone Management Program
1990-92, Evaluation Team, National Water Quality Evaluation Project
1968 Federal Water Pollution Control Administration (FWPCA) Fellowships in Civil Engineering to Cornell University and Stanford University.

Honor Societies

Chi Epsilon, Civil Engineering (officer)
Alpha Epsilon, Agricultural Engineering
Gamma Sigma Delta, Agricultural Sciences (officer)
Sigma XI, Scientific Research Society

Watershed Monitoring and Control Systems, Research and Outreach Applications

- Knowledge based systems (KBS): expert systems, neural networks, fuzzy logic, genetic algorithms
- Design of watershed water quality monitoring networks
- Integrated KBS-simulation models-databases-GIS watershed applications
- Monitoring and evaluation of watershed control systems
- Surface and Groundwater Contaminant Transport Processes
- Wellhead Delineation Methods
- Real Time Control Systems
- Water Supply Systems
- International Water Resources Engineering and Conservation Applications

A complete listing of publications, invited presentations, grants and contracts, software applications, international projects, graduate students advised and awards are available upon request. Additional details are also available at: www.worldwaterwatch.org/paul.htm

Recent and Selected Publications

- Strobl, R.O. and P.D. Robillard. 2006. Water quality monitoring network design: a review. Submitted to the Journal of Water and Environment.
- Strobl, R.O. and P.D. Robillard. 2006. Artificial intelligence technologies in surface water quality monitoring. *Water International* 31(2) 198-209.
- Strobl, R.O., P.D. Robillard, R.D. Shannon, R.L. Day, and A.J. McDonnell. 2006. A water quality monitoring network design methodology for the selection of critical sampling points: Part I. *Environmental Monitoring and Assessment* 112: 137-158.
- Strobl, R.O. and P.D. Robillard. 2006. Comparison of united states and german wellhead protection area delineation methods in agricultural settings. *Journal of the Water Research Commission-Water SA* (in press).
- Strobl, R.O., P.D. Robillard, and P. Debels. 2006. Critical sampling points methodology: case studies of geographically diverse watersheds. *Environmental Monitoring and Assessment* (in press)
- Strobl, R.O., P.D. Robillard, R.D. Shannon, R.L. Day, and A.J. McDonnell. 2006. A water quality monitoring network design methodology for the selection of critical sampling points: Part II. *Environmental Monitoring and Assessment* (in press).
- Strobl, R.O. and P.D. Robillard. 2005. Review of USEPA-recommended and German wellhead protection area delineation methods. *Journal of Environmental Hydrology*, Volume 13.
- Robillard, P.D., R. Zhao, E.D. Warner, D.W. Lehning, and B.M. Evans. 2004. Lake Okeechobee watershed monitoring network optimization. *World Water Watch*, Cambridge, MA.
- Robillard, P.D., W.E. Sharpe, and B.R. Swistock. 2004. Reducing radon in drinking water. *The Encyclopedia of Water*, J.H. Lehr (ed.), John Wiley and Sons, Hoboken, NJ.
- Swistock, B.R., W.E. Sharpe, and P.D. Robillard. 2004. The influence of well construction on bacterial contamination. *Penn State Institutes for the Environment*, Pennsylvania State University, University Park, PA.
- Srivastava, P., J.M. Hamlett, P.D. Robillard, and R.L. Day. 2002. Watershed optimization of best management practices using AnnAGNPS and a genetic algorithm. *Water Resources Research* 38(3).
- Parson, S., J.M. Hamlett, P.D. Robillard, P. Johnson, M. Urquidi-MacDonald. 2002. Development of the internet watershed education tool (InterWET). *Informing Science* (3) 185-193.
- Robillard, P.D., M.A. Foster, R. Zhao, D.W. Lehning. 2002. STEWARD: A knowledge-based system for selection, assessment, and design of watershed water quality control systems. *Center for AI in Water Quality Control Systems*, Environmental Resources Research Institute, Pennsylvania State University, University Park, PA., 32 pp.
- Srivastava, P., R.L. Day, P.D. Robillard, and J.M. Hamlett. 2001. AnnGIS: integration of GIS and a continuous simulation model for non-point source pollution assessment. *Transactions in GIS*, 2001, 5(3): 221-234.
- Robillard, P.D., R.H. Galarraga, D.B. Klindienst, J.M. Madsen, O. Parra, J. Pritchard, A. Villarroel, and V. Zapata. 2000. Local to global environmental interactions: Sustaining Earth Systems: Water-The Lifeline of Biodiversity. *Environmental Resources Research Institute*, Pennsylvania State University, University Park, PA.
- Parson, S.C., J.M. Hamlett, P.D. Robillard, M.A. Foster. 1998. Determining the decision-making risk from AGNPS simulations. *Transactions of ASAE* 41(6):1679-1688.

- Foster, M.A. and P.D. Robillard. 1997. GIS, model, and internet-based decision support for targeting water quality control practices. IN: Proceedings of the American Water Resources Association Symposium: GIS and Water Resources. Fort Lauderdale, FL. pp.142-148.
- Robillard, P.D. 1992. Extending the RCWP knowledge-base to future nonpoint source control projects. The National Rural Clean Water Symposium. Center for Environmental Research, U.S. Environmental Protection Agency, Cincinnati, OH. pp.375-384.
- Robillard, P.D. and R.L. Droste. 1992. Design and maintenance of rural water supply systems for improved performance. Proceedings of the Water Resources Division, American Society of Civil Engineers, Baltimore, MD. pp.523-528.
- Robillard, P.D., J. C. Clausen, E.G. Flaig, and D.M. Martin. 1992. Research needs and future vision for nonpoint source projects. The National Rural Clean Water Symposium. Center for Environmental Research, U.S. Environmental Protection Agency, Cincinnati, OH. pp. 385-392.
- Robillard, P.D. and P.B. Kubek. 1992. Use of contaminant mobility and transport parameters to determine water testing protocol. Proceedings of the Water Resources Division, American Society of Civil Engineers, Baltimore, MD. pp.831-836.
- Robillard, P.D., P.B. Kubek, and M.A. Foster. 1991. Nonpoint source database (NPSDB) development and design. Coastal Zone Applications. U.S. Environmental Protection Agency, Washington, DC. 58 pp.
- Robillard, P.D. and R.L. Droste. 1990. Water supply systems: Applications to developing countries. American Water Resources Association, Denver, CO. November. 12 pp.
- Robillard, P.D. 1990. Linking GIS to expert systems for water resources management. Proceedings of Geographic Information Systems, Simulation Models and Knowledge-based Systems for Landuse Management. Virginia Polytechnic Institute, Blacksburg, VA. pp.1-10.
- Robillard, P.D. 1990. Innovative nonpoint source control practices. Microfiche No. 90-2058. American Society of Agricultural Engineers, St. Joseph, MI. 12 pp.
- Robillard, P.D., R.C. Brandt, and J.M. Hamlett. 1990. Applications of GIS in water resources engineering. Microfiche No. 90-3032. American Society of Agricultural Engineers. St. Joseph, MI. 14 pp.
- Robillard, P.D., W.E. Sharpe, B.R. Swistock, K.S. Martin, and C. Doscher. 1990. Incidence of lead and nitrate contamination in rural Pennsylvania water supplies. Technical Paper NABEC 90-303. Northeast Agricultural and Biological Engineering Conference. Pennsylvania State University, University Park, PA. 14 pp.
- Robillard, P.D. and P.B. Kubek. 1990. Staged water contaminant testing protocols. American Water Resources Association, Denver, CO. November. 15 pp.
- Robillard, P.D. and H.A. Elliott (Eds.). 1989. Water conservation and waste management in the food processing industry. Proc., Food Industry Council of Penn., Harrisburg, PA. 164 pp.
- Robillard, P.D. and M.F. Walter. 1982. The technical grouping of soils to retain nutrients from livestock manure applications. International Federation of Organic Agriculture, Massachusetts Institute of Technology, Cambridge, MA. 14 pp.
- Robillard, P.D., M.F. Walter, and L.M. Bruckner. 1982. Planning guide for evaluation of agricultural nonpoint source water quality controls. Environmental Research Laboratory, U.S. EPA. National Technical Information Service, Washington, DC. 733 pp.