

FRANCIS G. DOHERTY

President
AquaTOX Research, Inc. Syracuse, NY USA

PROFESSIONAL EXPERIENCE

1987-1992 Syracuse Research Corporation (Syracuse, NY), Manager-Aquatic Tox Lab
1986-1987 Rutgers, The State University of NJ (Piscataway, NJ), Post-doctoral Fellow
1978-1983 Betz Laboratories, Inc. (Trevose, PA), Supervisor-Aquatic Tox Lab
1974-1976 (Intermittent) U.S. Geological Survey (Hartford, CT), Field Technician

QUALITY ASSURANCE BACKGROUND

Dr. Doherty established a Good Laboratory Practice (GLP) program in 1990 for conducting Fate and Effects Testing projects on new drug products for pharmaceutical clients under FDA guidelines while at Syracuse Research Corporation. Dr. Doherty served as Study Director on multiple projects over a 2-yr period while working closely with the team's Quality Assurance Officer. Subsequently, Aquatox Research was accredited under ISO 17025 from 2010 to 2015 under Dr. Doherty's direction in order to market its microassay testing program internationally. As a lab manager for multiple organizations for the majority of his career, Dr. Doherty has been responsible for the training of dozens of entry-level technicians and the technical quality of tens of thousands of standardized tests and dozens of formal research projects conducted under his supervision.

EDUCATION

1986 Ph.D. (Zool), Department of Biology, Virginia Tech, Blacksburg, VA.
1978 M.S. (Zool), Department of Zoology and Microbiology, Ohio University, Athens, OH.
1976 B.A. (Biol), Department of Biology, Eastern Conn. State College, Willimantic, CT.

TEACHING EXPERIENCE

1983 (Fall) Virginia Tech (Blacksburg, VA), Graduate Teaching Assistant
1977-1978 Ohio University (Athens, OH), Graduate Teaching Assistant
1977 (Fall) Holzer Hospital School of Nursing (Chillicothe, OH), Lecturer and Lab Instructor
1975-1976 Eastern Connecticut State College (Willimantic, CT) Lab Instructor and Tutor

SEMINAR ORGANIZER

- 1996** A One-Day Seminar on Microtox (5/14)
- 1992** Acute Aquatic Toxicity Test Methods (4/27-5/1)
- 1990** Acute Aquatic Toxicity Test Methods (10/22-26)
- 1989** Acute Aquatic Toxicity Test Methods (3/28-31 and 9/25-29)

ACADEMIC/PROFESSIONAL ACTIVITIES

Student Research Supervision

- 2007** Ran Liu, Syracuse University Falcone Center for Entrepreneurship, D'aniello Entrepreneurial Internship Program.
- 2005** Kangze He, Syracuse University School of Management Kaufmann Entrepreneur Internship Program.
- 2005** Judge, Panasci Business Plan Competition, Syracuse University School of Management
- 1991-1996** Pamela Wildridge, Dissertation entitled "The Effects of Elevated Environmental Potassium on the Zebra Mussel (Dreissena polymorpha)". Ph.D. rcvd. 1996 from SUNY College of Env. Sci. & Forestry.
- 1996** Syracuse University School of Management, MBA Consulting Project
- 1993** Syracuse University College of Law, Technology Transfer Research Center

Invited Lecturer

- 2004** The RETEC Group (Syracuse, NY)
- 2003** The RETEC Group (Ithaca, NY)
- 2002** Penn State University (University Park, PA)
- 2001** Blasland, Bouck & Lee (Syracuse, NY)
- 2001** Niagara Mohawk Power Corporation (Syracuse, NY)
- 1998** Ithaca College (Ithaca, NY)
- 1997, 1995** LeMoyne College (Syracuse, NY)
- 1996** American Electroplaters' and Surface Finishers' Society (Binghamton, NY)
- 1995, 1988** Johnson State College (Johnson, VT)
- 1995, 1992** State University of NY/College of Env. Sci. & Forestry (Syracuse, NY)
- 1993** Syracuse University College of Law (Syracuse, NY)
- 1990** Merck & Co., Inc. (Rahway, NJ)

Professional Society Presentations

- 2003** Int. Conf. on Contaminated Soils, Sediments and Water, Amherst, MA
1999 Society of Environmental Toxicology and Chemistry (SETAC), Philadelphia, PA
1993 TAPPI Annual Technical Conference, Boston, MA
1992 New York Water Pollution Control Association Fall Chapter meeting, Syracuse, NY
1992 Zebra Mussel Conference, Toronto, Ontario, Canada
1991 Zebra Mussel Conference, Toronto, Ontario, Canada
1990 Illinois Water Pollution Control Board Biomonitoring Conference, Matteson, IL
1989 SETAC, Toronto, Ont., Canada
1987 SETAC, Pensacola, FL
1986 American Society for Testing and Materials, New Orleans, LA
1985 American Society of Zoologists, Baltimore, MD
1985 SETAC, St. Louis, MO
1985 American Malacological Union Meetings, Kingston, RI
1983 SETAC, Arlington, VA
1978 American Society of Zoologists, Richmond, VA

Journal Reviewer

Advances in Environmental Research
American Society for Testing and Materials
Archives of Environmental Contamination and Toxicology
Environmental Science and Technology
Environmental Toxicology and Chemistry (Editorial Board Member, 2004-2006)
Hydrobiologia
Journal American Water Works Association
Water Research

PUBLICATIONS

Journal Articles

- Doherty, F.G. 2008. Effect of storage temperature on the activity of submitochondrial particles. Environ. Toxicol. Chem. **27**, 2501-2503.
- Doherty, F.G. 2005. The Submitochondrial Particle Assay as a Biological Monitoring Tool Pgs 376-379, In: J.H. Lehr (ed) Water Encyclopedia. John Wiley & Sons, Inc., Hoboken, NJ
- Doherty, F.G. and K.E. Gustavson. 2002. Repeatability of the submitochondrial particle assay. Ecotoxicol. Environ. Safety. **53**, 122-128.

- Doherty, F.G. 2001. A review of the Microtox^R toxicity test system for assessing the toxicity of sediments and soils. Water Qual. Res. J. Canada **36**, 475-518.
- Doherty, F.G., A.A. Qureshi, and J.B. Razza. 1999. Comparison of the Ceriodaphnia dubia and Microtox^R Inhibition tests for toxicity assessment of industrial and municipal wastewaters. Environ. Toxicol. **14**, 375-382.
- Wildridge, P.J., R.G. Werner, F.G. Doherty, and E.F. Neuhauser. 1998. Acute effects of potassium on filtration rates of adult zebra mussels, Dreissena polymorpha. J. Great Lakes Res. **24**, 629-636.
- Wildridge, P.J., R.G. Werner, F.G. Doherty, and E.F. Neuhauser. 1998. Acute toxicity of potassium in the adult zebra mussel, Dreissena polymorpha. Arch. Environ. Contam. Toxicol. **34**, 265-270.
- Doherty, F.G. 1996. Biomonitoring includes both traditional and alternative tests. Clearwaters **26 (3)**, 39-40.
- Magliette, R.J., D. McKinney, E.S. Venkataramani, S. Bacher, and F. Doherty. 1995. Need for environmental quality guidelines based on ambient freshwater quality criteria in natural waters-case study "zinc". Bull. Environ. Contam. Toxicol. **54**, 626-632.
- Doherty, F.G., D.W. Evans, and E. Neuhauser. 1993. An assessment of total and leachable levels of toxic contaminants in two populations of zebra mussels (Dreissena polymorpha) from Lake Erie. Ecotox. Environ. Safety **25**, 328-340.
- Doherty, F.G. 1991. Quality assurance in effluent monitoring. Environ. Audit. **2**, 249-257.
- Doherty, F.G. 1990. The Asiatic clam, Corbicula spp., as a biological monitor in freshwater environments. Environ. Monit. Assess. **15**, 143-181.
- Doherty, F.G., D.S. Cherry, and J. Cairns, Jr. 1990. Multi-seasonal study of tissue water content and body condition in Corbicula fluminea (Bivalvia: Corbiculidae) from the New River, Virginia. The Nautilus **104**, 10-15.
- Doherty, F.G., M.L. Failla, and D.S. Cherry. 1988. Metallothionein-like heavy metal binding protein levels in Asiatic clams are dependent on the duration and mode of exposure to cadmium. Water Res. **22**, 927-932.
- Doherty, F.G. and D.S. Cherry. 1988. Tolerance of the Asiatic clam, Corbicula spp. to lethal levels of toxic stressors - A review. Environ. Pollut. **51**, 269-313.
- Doherty F.G., D.S. Cherry, and J. Cairns, Jr. 1987. Valve closure behavioral responses of the Asiatic clam, Corbicula fluminea on exposure to cadmium and zinc. Hydrobiol. **153**, 159-167.

- Doherty, F.G., M.L. Failla, and D.S. Cherry. 1987. Identification of a metallothionein-like heavy metal binding protein in the freshwater bivalve, Corbicula fluminea. Comp. Biochem. Physiol. **87C**, 113-120.
- Doherty, F.G., D.S. Cherry, and J. Cairns, Jr. 1987. Spawning periodicity of the Asiatic clam Corbicula fluminea in the New River, Virginia. Amer. Midl. Nat. **117**, 71-82.
- Doherty, F.G., J.L. Farris, D.S. Cherry, and J. Cairns, Jr. 1986. Control of the freshwater fouling bivalve Corbicula fluminea by halogenation. Arch. Environ. Contam. Toxicol. **15**, 535-542.
- Doherty, F.G. 1985. Detoxification rates of chlorinated solutions as determined by the half-life of biological activity with Daphnia magna. Environ. Toxicol. Chem. **4**, 97-105.
- Doherty, F.G. 1983. Interspecies correlations of acute aquatic median lethal concentration for four standard testing species. Environ. Sci. Technol. **17**, 661-665.
- Doherty, F.G. and W.D. Hummon. 1980. Respiration of aquatic insect larvae (Ephemeroptera, Plecoptera) in acid mine water. Bull. Environ. Contam. Toxicol. **25**, 358-363.

Abstracts

- Venkataramani, E.S., J.R. Carlin, U. Dolling, P. Christofalo, R.J. Magliette, B.H. Arison, R.A. Stearns, F.G. Doherty, and S. Bacher. 1992. Biotransformation of finasteride (MK0906) by Selenastrum capricornutum (green algae). Preprint Extended Abstract, American Chemical Society.
- Doherty, F.G., D.S. Cherry, and J. Cairns, Jr. 1985. Spawning activity of the Asiatic clam, Corbicula fluminea, in the New River, Virginia. Amer. Malacol. Union Bull.
- Doherty, F.G. 1985. Seasonal patterns of tissue accumulation and resorption in the Asiatic clam, Corbicula fluminea. Am. Zool. 25(4):24A.
- Doherty, F.G. and W.D. Hummon. 1978. A preliminary study on the toxic mode of action of acid mine water on aquatic invertebrates (Ephemeroptera, Plecoptera) through respirometry. Am. Zool. 18(3):632.

Symposia Proceedings

- Neuhauser, E.F., J.P. Kreitinger, D.V. Nakles, S.B. Hawthorne, F.G. Doherty, and C.A. Menzie. 2003. Characterization of soot carbon and PAH bioavailability in aquatic sediments at MGP sites. Proceedings from the 19th Annual International conference on Contaminated Soils, Sediments and Water, University of Massachusetts, Amherst, MA, October 20-23.

Doherty, F.G. 1993. Standard operating difficulties and practical limitations in the conductance of effluent toxicity tests. TAPPI Technical Conference Proceedings.

Hummon, W.D., W.A. Evans, M.R. Hummon, F.G. Doherty, R.H. Wainberg, and W.S. Stanley. 1978. Meiofaunal abundance in sandbars of acid mine polluted, reclaimed, and unpolluted streams in southeastern Ohio. p.188-203. In: J.H. Thorpe III and J.W. Gibbons (eds.) Energy and Environmental Stress in Aquatic Systems DOE Symposium Series: 48 CONF-771114, National Technical Information Service, 854p.

Thesis and Dissertation

Doherty, F.G. 1986. A Multidisciplinary Study of the Asiatic Clam CORBICULA FLUMINEA From the New River, Virginia. Ph.D. Dissertation, Department of Biology, Virginia Polytechnic Institute & State University, Blacksburg, VA.

Doherty, F.G. 1978. A Preliminary Study of the Toxic Mode of Action of Acid Mine Water in Aquatic Invertebrates (Plecoptera, Ephemeroptera) Through Respirometry. M.S. Thesis, Department of Zoology and Microbiology, Ohio University, Athens, OH.

Patents

Davis, D.P. and F.G. Doherty. 1985. Method for controlling mollusks. Patent Number 4,561,983.

Study Reports

Basu, D., F. Doherty, G. Sage, P. McClure, and G. Diamond. 1992. Research Needs Related to Cycling of Mercury in Onondaga Lake. Prepared for Niagara Mohawk Power Corporation, Syracuse, NY.

Diamond, G., F. Doherty, and E. Michalenko. 1991. Hazard Identification of Commercially Available Biocides Used and Being Developed to Control Zebra Mussels. Prepared for Niagara Mohawk Power Corporation, Syracuse, NY, Centerior Energy, Cleveland, OH, and Wisconsin Electric Power Company, Milwaukee, WI.

Diamond, G., F. Doherty, P. Durkin, L. Ingerman, W. Meylan, E. Michalenko, and M. Odin. 1991. Environmental Effects of Commercially Available Molluscicides Used and Being Developed to Control Zebra Mussels. Prepared for Niagara Mohawk Power Corporation, Syracuse, NY, Centerior Energy, Cleveland, OH, and Wisconsin Electric Power Company, Milwaukee, WI.

Doherty, F. 1988. Guidelines for the Review of Environmental Effects Data for Health and Environmental Effects Documents (HEEDS). Prepared under Contract No. 68-C8-0004 awarded to Syracuse Research Corporation by the Environmental Criteria and Assessment Office of the U.S. Environmental Protection Agency in Cincinnati, OH.

Technical Support Documents

Colman, J., F. Doherty, D.A. Gray, P. Goetchius, W. Jarvis, C.O. Shore, P.H. Howard, and M.W. Neal. Technical Support Document on Dinitrotoluenes. Prepared under Contract No. 68-02-4209 awarded to Syracuse Research Corporation by the Test Rules Development Branch, Existing Chemical Assessment Division, Office of Toxic Substances, Washington, D.C. (1988).

Health and Environmental Effects Documents

Meylan, W., F. Doherty, and N. Chambers. Health and Environmental Effects Document on 1-Butanol. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Basu, D., N. Chambers, and F. Doherty. Health and Environmental Effects Document on Cacodylic Acid. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Basu, D., F. Doherty, J. Ward, and E. Anderson. Health and Environmental Effects Document on Crotonaldehyde. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Anderson, E., E. Crosbie, and F. Doherty. Health and Environmental Effects Document on Diethyl-p-Nitrophenylphosphate (Paraoxon). Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Doherty, F., J. Ward, and W. Jarvis. Health and Environmental Effects Document on Disulfoton. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Crosbie, E., E. Anderson, and F. Doherty. Health and Environmental Effects Document on Endothall. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Crosbie, E., F. Doherty, and J. Ward. Health and Environmental Effects Document on Formic Acid. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Crosbie, E., F. Doherty, and F. Llados. Health and Environmental Effects Document on

- Glycinaldehyde. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Meylan, W., F. Doherty, and J. Liccione. Health and Environmental Effects Document on 2-Hexanone. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Jarvis, W., P. Goetchius, N. Chambers, and F. Doherty. Health and Environmental Effects Document on Maleic Hydrazide. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Basu, D., C. Shore, P. Goetchius, and F. Doherty. Health and Environmental Effects Document on Methylchlorocarbonate. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Meylan, W., F. Doherty, and F. Llados. Health and Environmental Effects Document on Molybdenum. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Basu, D.K., F. Doherty, and P. Goetchius. Health and Environmental Effects Document on Nitrite. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Basu, D.K., F. Doherty, and N. Chambers. Health and Environmental Effects Document on Nitrogen Dioxide. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Crosbie, E., E. Anderson, F. Doherty. Health and Environmental Effects Document on Octamethylpyrophosphoramidate. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Meylan, W., F. Doherty, and P. McClure. Health and Environmental Effects Document on Pentachlorobenzene. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Shore, C., D. Basu, and F. Doherty. Health and Environmental Effects Document on Phosphine. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Meylan, W., F. Doherty, and C. Eisenmann. Health and Environmental Effects Document on Selenium and Compounds. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).
- Crosbie, E., C. Eisenmann, and F. Doherty. Health and Environmental Effects Document on Thiram. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati,

OH. (1989).

Meylan, W., F. Doherty, and J. Freedman. Health and Environmental Effects Document on Vinyl Acetate. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Meylan, W., C. Eisenmann, and F. Doherty. Health and Environmental Effects Document on 4-Aminopyridine. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Jarvis, W., S. Coleman, and F. Doherty. Health and Environmental Effects Document on Bromoform. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1989).

Bosch, S., D. Basu, and F. Doherty. Health and Environmental Effects Document on Chloroacetic Acid. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Basu, D.K., C. Eisenmann, and F. Doherty. Health and Environmental Effects Document on 4-Chlorobenzotrifluoride. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Crosbie, E., F. Doherty, S.P. Sichak. Health and Environmental Effects Document on 2-Chloro-1,3-Butadiene. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Basu, D.K., S. Bosch, F. Doherty. Health and Environmental Effects Document on Cyanohydrins. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Basu, D., C. Eisenmann, and F. Doherty. Health and Environmental Effects Document on Dibromochloromethane. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Wilbur, S., D. Basu, and F. Doherty. Health and Environmental Effects Document on 2,4-Dichlorophenoxyacetic Acid. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Crosbie, E., S.P. Sichak, and F. Doherty. Health and Environmental Effects Document on Ethylenediamine. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Crosbie, E., S.P. Sichak, and F. Doherty. Health and Environmental Effects Document on Hexachloroethane. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Meylan, W., P. Goetchius, and F. Doherty. Health and Environmental Effects Document on Methomyl. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Crosbie, E., F. Doherty, and J. Ward. Health and Environmental Effects Document on Monochlorobutanes. Prepared under Contract No 68-C3-3521 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Crosbie, E., F. Doherty, and E. Anderson. Health and Environmental Effects Document on Cyclohexanone. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1988).

Crosbie, E., F. Doherty, S. Coleman, and P. Goetchius. Health and Environmental Effects Document on Thiofanox. Prepared under Contract No 68-C8-0004 for ECAO, U.S. EPA, Cincinnati, OH. (1988).