

# Dr. Stephen A. Bloom

## Address:

Ecological Data Consultants

P.O. Box 760

Archer, FL 32618-0760

(352) 528-6508

e-mail: [sabloom@ironflower.com](mailto:sabloom@ironflower.com)

URL: <http://www.ironflower.com>

## Education:

BA (Zoology) With Honors 1969: Univ. South Florida, Tampa, FL 33620

Marine Ecology Summer Course 1969: M. B. L., Woods Hole, Ms

Ph.D. Zoology 1974: Univ. Washington, Seattle, WA 98195

M.S. Computer Science 1990: Univ. Florida, Gainesville, FL 32611

Ph.D. Metal Arts 2001; Florida Artist Blacksmith Assoc., Tallahassee, FL

## General Analytical & Statistical Background:

Minors in Statistics and Analytical Techniques

University of Washington (part of the Ph.D)

University of Florida (part of the M.S.)

Statistician and software designer :

Dr. J. L. Simon's lab (Red tide recovery in Tampa Bay, 5-year study of sewage disposal in Hillsborough Bay)

Tampa Electric Company (Impact study - subcontractor to the Mote Marine Lab)

Taylor Biological (Dredge impact near Panama City)

Lewis Environmental Services (Port Manatee seagrass remediation project)

Designer and programmer of multiple statistical systems for mainframes, mini and microcomputers

implementing parametric, nonparametric and multivariate statistics in multiple computer languages.

Staff research scientist and statistical consultant in Soil & Water Science (UF) and with the USDA-ARS (Fort Collins, Co)

Consultant to Dr. Roger Papke - Dept. of Pharmacology and Therapeutics, University of Florida, College of Medicine, Gainesville, Florida, USA (RLP, SAAAR) 2006 to date

## Major Software Systems:

The Community Analysis System: A comprehensive software system for community analysis on IBM-compatible personal computers. Version 5.0 released in 1994. Version 2007 in beta testing.

WETLANDS: a water flow and solute transport model. A two-dimensional finite-difference model including dynamic pond and soil interactions and Priestley-Taylor evapotranspiration.

## Consultations:

Clients have included the Army Corps of Engineers, Barry Vittor, Inc., Breedlove and Associates, Environmental Science & Engineering Corp., Florida Department of Natural Resources, Florida Department of Transport, Lewis Environmental Services, Mote Marine Laboratories, Smithsonian Institution, Taylor Biological Company, University of Illinois at Springfield, Center for Legal Studies, USGS-ARS (Ft. Collins) and U.S. Fish & Wildlife Service with services including software engineering, remote testing systems, database management, and statistical analyses. Recent clients have been the Soil GIS program, Soil & Water Science Dep't, U.F. (spectrographic and programming assistance); Papke Neurological Lab, College of Medicine, U.F. (graphical and statistical presentation of nicotine response data) and Putman County Environmental Council (graphical and statistical assistance). Expert witness for Taylor Biological with regard to shell dredging in Lake Pontchartrain.

## Teaching:

Institutions include the University of South Florida, University of Florida, University of Washington, and the Duke

Marine Laboratory at Beaufort with course in Marine Ecology, Invertebrate Zoology, Integrated Marine Biology, Biological Photography, General Ecology, Principles of Animal Biology, Coral Reef Ecology, Reproduction and Habitat Selection Strategies, Analytical Techniques in Community Ecology, and Soil Physics

**Research:**

Postdoctorate: Dr. J. L. Simon. 1974-1975. Creation and implementation of computer-assisted data storage and analytical techniques for marine benthic data. Univ. of South Florida

Dissertation: Resource partitioning among the doridacean nudibranch molluscs of the San Juan Archipelago, Washington - A guild hypothesis. University of Washington, Ph.D. 1974 (Diss. Abs. 35(8), 1975)

**Employment:**

Ecological Data Consultants, Inc. 1978 to date

IronFlower Forge 1984 to date

Soil & Water Science Department (Senior Analyst & Programmer) 1983 to 2006 (retired after 31 years)

Assistant Professor, Zoology, Univ. of Florida 1976 to 1983

Adjunct Senior Scientist, Mote Marine Laboratory, Sarasota, Fl 1978 to 1982

Instructor, Duke Marine Laboratory 1976

Visiting Assistant Professor, Univ. of South Florida 1975-1976

**Membership in Professional Societies:**

Ecological Society of America

Society of Sigma Xi

Florida Artist & Blacksmith Association

**Publications:**

1. Bloom, S.A. 1970. An oil dispersant's effect on the micro-flora of beach sand. *J.Mar.Biol.Ass.U.K.* 50:919-923.
2. Bloom, S.A., J.L.Simon & V.D.Hunter. 1972. Animal-sediment relations and community analysis of a Florida estuary. *Marine Biology* 13:43-56.
3. Bloom, S.A. 1975. The motile escape response of a sessile prey: a sponge-scallop mutualism. *J.Exp.Mar.Biol.Ecol.* 17:311-321.
4. Bloom, S.A. 1976. Morphological correlations between dorid nudibranch predators and sponge prey. *Veliger* 18:289-301.
5. Bloom, S.A., S.L.Santos & J.G.Field. 1977. A package of computer programs for benthic community analyses. *Bull.Mar. Sci.* 27:577-580.
6. Bloom, S.A. & C.F.Bloom 1978. Radular variation in two species of dorid nudibranchs. *J.Mollusc.Studies* 43:276-300.
7. Bloom, S.A. 1980. Multivariate quantification of community recovery. In: *The Recovery Process in Damaged Ecosystems*. J.Cairns (ed.), Ann Arbor Science Publishers, Inc., Ann Arbor. Pp.141-151.
8. Bloom, S.A. 1980. An intertidal soft-sediment avian exclosure which minimizes sediment alterations. *Mar.Ecol.Prog.Ser.* 3:79-82.
9. Santos, S.L. & S.A. Bloom. 1980. Stability in an annually defaunated estuarine soft-bottom community. *Oecologia* 46: 290-294.
10. Crisman, T.L., R.L. Schulze, R.L.Brezonik & S.A. Bloom. 1980. Acid precipitation: the biotic response in Florida lakes. *Proc.Int.Conf.Ecol.Impact.Acid Precip.*, Norway Pp.296-297.
11. Bloom, S.A.. 1981. Specialization and noncompetitive resource partitioning among sponge-eating dorid nudibranchs. *Oecologia* 49:305-315.
12. Bloom, S.A. 1981. Similarity indices in community studies: potential pitfalls. *Mar.Ecol.Prog.Ser.* 5:125-128.
13. Bloom, S.A. 1983. Seasonality and structure of a shallow-water Florida Gulf Coast macrobenthic community. *Int.Rev.Hydrobiol.* 68: 539-564.

14. Santos, S.L. & S.A. Bloom. 1983. Succession in an estuarine soft-bottom community. *Int.Rev.Hydrobiol.* 68: 617-632.
15. Bloom, S.A. 1984. The Community Analysis System: an interactive integrated program system for Apple II computers. Commercial product available through EDC, Inc.
16. Mansell, R.S., S.A. Bloom, H.M. Selim & R.D. Rhue. 1986. Multispecies cation leaching during continuous displacement of electrolyte solutions through soil columns. *Geoderma* 38: 61-75.
17. Bloom, S.A. 1987. Seagrass Zonation: Experimental Verification of the roles of competition and predation. IN: Webb, F.J., Editor. Proc. 14th Annual Conf. on Wetlands Restoration & Creation. Hillsborough Community College, Tampa, FL. pp. 48-62.
18. Downs, W.C., R.S. Mansell, J.J. Street, S.A. Bloom, and D.C.M. Augustijn. 1987. Hydrazine transport in columns of sandy soil. p. 285-289. In Proceedings of International Conference on the Impact of Physico-Chemistry on the Study, Design, and Optimization of Processes in Natural Porous Media, M. Sardin and D. Schweich (eds.) Convened in Nancy, France during June 10-12, 1987.
19. Gaston, L.A., R.S. Mansell, R.D. Rhue, S.A. Bloom and G.B. Volk. 1987. Cation leaching during application of sulfuric and nitric acids to an ultisol. p. 421-428. In Proceedings of an International Conference on Acid Rain, R. Perry, J.N.B. Bell, R.M. Harrison, and J. Lester (eds.). Convened in Lisbon, Portugal during September 1-3, 1987.
20. Mansell, R.S., S.A. Bloom and W.C. Downs. 1987. Numerical Simulation of hydrazine transport in a sandy soil. p. 177-190. In Stone, D. A. and F. L. Wiseman (eds.) Proceedings of AFESC Third Conference on the Environmental Chemistry of Hydrazine Fuels. Convened in Panama City, Florida by the U.S. Air Force during September 15-17, 1987. Hazardous Materials Technical Center, P. O. Box 8168, Rockville, MD 20856-8168.
21. Mansell, R. S., S. A. Bloom, H. M. Selim, and R. D. Rhue. 1988. Simulated transport of multiple cations in soil using variable selectivity coefficients. *Soil Sci. Soc. Am. J.* 52:1533 - 1540.
22. Street, J.J., C. Johnston, L. T. Ou, R.S. Mansell, and S. Bloom. 1988. Environmental Interactions of Hydrazine Fuels In Soil/Water Systems. Final Report (ESL -TR-88-24) to Engineering and Services Laboratory, Air Force Engineering and Services Center, Tyndall AFB, Florida 32403. 290 pages.
23. Kablan, R.A.T., R.S. Mansell, S.A. Bloom, and L.C. Hammond. 1989. Determinations of unsaturated hydraulic conductivity for Candler sand. *Soil Sci.* 148:155-164.
24. Mansell, R. S., S. A. Bloom, and L. A. G. Aylmore. 1990. Simulating cation transport during unsteady flow in water-unsaturated sandy soil. *Soil Sci.* 150:730-744.
25. Mansell, R. S., S. A. Bloom, and B. Burgoa. 1991. Phosphorus transport with water flow in acid, sandy soils. In Jacob Bear and M. Y. Corapcioglu (ed.). p 271-314. *Transport Processes in Porous Media. Proceedings of NATO Advanced Study Institute held at Washington State University during July 9 - 18, 1989.* Kluwer Academic Publishers, Dordrecht, The Netherlands.
26. Jorge, J. A., R. S. Mansell, F. M. Rhoads, S. A. Bloom, and L. C. Hammond. 1992. Compaction of a sandy soil by tractor tires. *Soil Sci.* 153(4):322-330.
27. Mansell, R. S., S. A. Bloom, B. A. Burgoa, P. Nkedi-Kizza, and J. S. Chen. 1992. Experimental and simulated P transport in soil using a multireaction model. *Soil Sci.* 153(3):185-194.
28. Mansell, R. S., W. J. Bond, and S. A. Bloom. 1993. Simulating Cation Transport during water flow in soil: two approaches. *Soil Sci. Soc. Am. J.* 57(1): 3-9.
29. Mansell, R. S., S. A. Bloom, and W. J. Bond, . 1993. A tool for evaluating a need for variable selectivities in cation transport in soil. *Wat. Resour. Res.* 29(6):1855-1858.
30. Streever, W.J. and S.A. Bloom. 1993. The self-similarity curve: a new method of determining the sampling effort required to characterize communities. *J.Freshwater Ecology* 8(4): 401-403.
31. Mansell, R. S., S. A. Bloom, and P. Nkedi-Kizza. 1995. Phosphorus transport in Spodosols impacted by dairy waste.

Ecological Engineering 5:281-299.

32. Grant, S. A., R. S. Mansell, S. A. Bloom, and R. D. Rhue. 1995. Simulated transport of three cations through porous media: Effect of different approaches to modeling cation exchange reactions. *Water Resour. Res.* 31:185-198.
33. Mansell, R. S., R. D. Rhue, Y. Ouyang, and S. A. Bloom. 1996. Microemulsion-mediated recovery of residual gasoline from soil columns. *J. Soil Contam.* 5(4):309-327.
34. Bloom, S. A., Ali Fares, and R. S. Mansell. 1996. Modeling water flow and chemical transport under climatic variations: An aid in selecting appropriate management strategies. Proceedings of Conference entitled "Computing in Environmental Resource Management" during December 2-4 of 1996 in Research Triangle Park, NC and sponsored by the Air and Waste Management Association
35. Fares, Ali, R.S. Mansell, and S. A. Bloom. 1997. Hydrological/Environmental impacts of tree harvesting within flatwood pine forests upon local wetlands. *in* Subsurface Hydrological Responses to Land Cover and Land Use Changes, ed. M. Taniguchi, Kluwer Acad. Publ. 167-186.
36. Mansell, R.S., S.A. Bloom & Ge Sun. 2000. A model for wetland hydrology: Description and validation. *Soil Science.* 165(5): 384-397.
37. Mansell, R. S., S. A. Bloom, and W. C. Downs. 2001. A multi-process model for transport of hydrazinium and two competing cations in water-saturated soil. *J. Environ. Qual.* 30:1540-1548.
38. Bloom, S.A. & R.S. Mansell. 2001. An algorithm for generating cation exchange isotherms from known binary selectivity coefficients. *Soil Sci. Soc. Amer. J.* 65(5):1426-1429.
39. Mansell, R. S., L. Ma, L. R. Ahuja, and S. A. Bloom. 2002. Adaptive grid refinement in numerical models for water flow and solute transport in soil: A review. *Vadose Zone Journal* 1: (In print).
40. Mathiyalagan V., S. Grunwald, K.R. Reddy, and S.A. Bloom. 2005. A WebGIS and geodatabase for Florida's Wetlands. *Computers & Electronics in Agriculture* 47: 69-75.
41. Roger L Papke, Caryn Trocme-Thibierge, Daniela Guendisch, Shehd Abdullah Abbas Al Rubaiy, & Stephen A. Bloom. 2011. Electrophysiological perspectives on the therapeutic use of nicotinic acetylcholine receptor partial agonists. *J Pharmacol Exp Ther* jpet.110.177485.

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