

JOHN P. BOLTE

Professor and Head, Bioengineering Department

Oregon State University, Corvallis, OR 97331

Telephone: (541) 737-6303; Fax: (541) 737-2082; Email: boltej@engr.orst.edu

EDUCATION AND EMPLOYMENT

B.S. Plant Science, University of Florida, Gainesville, 1977

M.S. Agricultural Engineering, University of Florida, Gainesville, 1983

Ph.D. Agricultural Engineering, Auburn University, Alabama, 1987

Department Head, Oregon State University, Bioengineering Department. Interim: July 2002-June 2005, Permanent: 2005-present. Responsibilities include administration of the department, supervising faculty and staff, managing budgets, and identifying/implementing departmental goals.

Associate Professor, Oregon State University, Bioengineering Department. July 1994 - present. Activities include development of simulation models, nonlinear analysis tools and geographic information systems for agricultural and natural resource management.

Assistant Professor, Oregon State University, Bioresource Engineering and Crop & Soil Science Departments. March 1998 - June 1994. Activities include development of expert systems and simulation models for agricultural and natural resource applications.

Post-Doctoral Systems Research Scientist, Oregon State University, Crop & Soil Science Department, April 1987 - March 1988. Activities similar to above position.

Other Assignments

PI of a highly multidisciplinary EPA-funded project "Developing Methods and Tools for Restoration Decisionmaking: Design, Implementation and Assessment in the Willamette Basin." This project integrates ecological, economic, and social scientists with information engineers and stakeholder groups to address the complexities of watershed restoration decisionmaking under constraints via spatially explicit multiobjective optimization.

CoPI of a multidisciplinary NSF Biocomplexity project studying the interactions of riparian policy evolution, land use, and riparian function in several Willamette basin watersheds. This effort, initiated Fall 2001, will use spatially explicit analysis with a multiobjective decisionmaking core and an agent-based simulation approach to evolve policy/pattern constructs to explore development of effective strategies for managing riparian areas under conditions of ecological and social function scarcity.

PI of an EPA project developing a range of software tools for simulation analysis, inferencing, and spatial analysis. These tools implement state of the art, computationally efficient analysis methodologies applicable to the analysis of complex systems, as well as associated visualization and data mining codes.

Involved in a highly multidisciplinary project collectively referred to as the Pacific Northwest Ecosystems Research Consortium, focused on applying multidisciplinary perspectives on watershed processes, data synthesis and landscape evolution modeling to alternative futures analysis in the Willamette basin, Oregon.

SCHOLARSHIP AND CREATIVE ACTIVITY

Refereed Publications:

Alexis K.Mills J.P. Bolte, P. Ruggiero, K.A. Serafin. E. Lipiec, P. Corcoran, J. Stevenson, C. Zanoccoc, D. Lach. 2018. Exploring the impacts of climate and policy changes on coastal community resilience: Simulating alternative future scenarios. *Environmental Modeling and Software* 109 (80-92). <https://doi.org/10.1016/j.envsoft.2018.07.022>.

Eva Lipiec, Peter Ruggiero, Alexis Mills, Katherine A. Serafin, John Bolte, Patrick Corcoran, John Stevenson, Chad Zanocco, and Denise Lach (2018) Mapping Out Climate Change: Assessing How Coastal Communities Adapt Using Alternative Future Scenarios. *Journal of Coastal Research* In-Press. <https://doi.org/10.2112/JCOASTRES-D-17-00115.1>

Ager, A.A, A.M.G.Barros, M.A. Day, H.K.Preisler, T.A. Speis, and J. P. Bolte. 2018. Analyzing fine-scale spatiotemporal drivers of wildfire in a forest landscape model. *Ecological Modeling*. In Press.

Spies, T. A., R. M. Scheller, and J. P. Bolte. 2018. Adaptation in fire-prone landscapes: interactions of policies, management, wildfire, and social networks in Oregon, USA. *Ecology and Society* 23(2):11. <https://doi.org/10.5751/ES-10079-230211>

Han, B, S.G. Benner, J. Bolte, K.B. Vache, A.N Flores. 2017. Coupling hydrologic processes and water rights to simulate spatially distributed water use in an intensively managed landscape. *Hydrology and Earth Systems Sciences*. In press.

Spies, T. A., E. White, A. Ager, J. D. Kline, J. P. Bolte, E. K. Platt, K. A. Olsen, R. J. Pabst, A. M.G. Barros, J. D. Bailey, S. Charnley, A. T. Morzillo, J. Koch, M. M. Steen-Adams, P. H. Singleton, J. Sulzman, C. Schwartz, and B. Csuti. 2017. Using an agent-based model to examine forest management outcomes in a fire-prone landscape in Oregon, USA. *Ecology and Society* 22(1):25. <https://doi.org/10.5751/ES-08841-220125>

Marshall, A., D. Lach, J. Stevenson, J. Bolte, J. Koch. 2016. Collaborative modeling to assess climate impacts on water resources in the Big Wood Basin, Idaho. In *Including Stakeholders in Environmental Modeling: Considerations, Methods and Applications*. Eds. Gray S., M. Paolisso, R. Jordan, S. Gray. Springer Publishing.

Turner, D. P., Conklin, D. R., Vache, K.B., Schwartz, C., Nolin, A. W., Chang, H., Watson, E., and Bolte, J. P. (2016), Assessing mechanisms of climate change impact on the upland forest water balance of the Willamette River Basin, Oregon. *Ecohydrology*. doi: 10.1002/eco.1776

Wu, Hong, J.P Bolte, D. Hulse, and B.R. Johnson. 2015. A scenario-based approach to integrating flow-ecology research with watershed development planning. *Landscape and Urban Planning* 144:74-89. doi:10.1016/j.landurbplan.2015.08.012.

Spies, T. A., E. M. White, J. D. Kline, A. Paige Fischer, A. Ager, J. Bailey, J., Bolte, J. Koch, E. Platt, C. S. Olsen, D. Jacobs, B. Shindler, M. M. Steen-Adams, and R. Hammer. 2014. Examining fire-

prone forest landscapes as coupled human and natural systems. *Ecology and Society* 19 (3): 9. [online] URL: <http://www.ecologyandsociety.org/vol19/iss3/art9/>

Ribe, R., M. Nielsen-Pincus, J. Bolte and B. Johnson. 2014. Testing Patterns of Landowner Propensities to Implement Extensive Forest Fuels Reduction: Agent-based Modeling Experiments in the Willamette Valley, U.S.A. In: Wissen Hayek, U., P. Fricker, and E. Buhmann (eds.) Peer Reviewed Proceedings of Digital Landscape Architecture 2014 at ETH Zurich. Herbert Wichmann Verlag, Berlin, ISBN 978-3-87907-530-0, pp. 248-260.)

Yospin, G.I., S.D. Bridgham, R.P. Neilson, J.P. Bolte, D.M. Bachelet, P.J. Gould, C.A. Harrington, J.A. Kertis, C. Evers, and B.R. Johnson. A new approach for projecting climate change impacts on forest succession for local land management. *Ecological Applications*. (In Review)

Bone C, Johnson B, Nielsen-Pincus M, Sproles E, and Bolte J. 2013. A Temporal Variant-Invariant Validation Approach for Agent-based Models of Landscape Dynamics. *Transactions in GIS*. (In Press)

Cushing, J., E. Hayduk, J. Walley, L. Zeman, K. Winers, M. Bailey, J. Bolte, B. Bond, D. Lach, C. Thomas, S. Stafford, and N. Stevenson-Molnar. 2012. (In:) Extricable links between data and visualization: Preliminary results from the VISTAS project. *Scientific and Statistical Database Management* 7338: 613-617.

Guzy, M. R., C. L. Smith, J. P. Bolte, D. W. Hulse and S. V. Gregory 2008. Policy Research Using Agent-Based Modeling to Assess Future Impacts of Urban Expansion into Farmlands and Forests. *Ecology and Society* 13 (1): 37. [online] URL: <http://www.ecologyandsociety.org/vol13/iss1/art37/>

A. Lufafa, J. Bolte, D. Wright, M. Kouma, I. Diedhiou, R.P. Dick, F. Kizito, E. Dossa and J.S. Noller. 2008 (in press). Regional carbon stocks and dynamics in native woody shrub communities of Senegal's Peanut Basin Agriculture, *Ecosystems & Environment*.

Bolte, J.P., D.W. Hulse, S.V. Gregory, and C. Smith. 2007. Modeling biocomplexity – actors, landscapes and alternative futures. *Env. Modeling and Software*. 22(5) 570-579.

Cox, M and J.P. Bolte. 2007. A spatially explicit network-based model for estimating stream temperature distribution. *Environmental Modeling and Software*. 22(4):502–514.

Wallick, R., S. Lancaster, and J.P. Bolte. (In Press). Determination of bank erodibility for natural and anthropogenic bank materials using a model of lateral migration & observed erosion along the Willamette River, Oregon, USA. *River Research and Applications*.

Rooklidge S., Burns E., Bolte J. 2005. Modeling Antimicrobial Contaminant Removal in Slow Sand Filtration, *Water Research*. 39:331-339.

Watanabe, M., R.M. Adams, J. Wu, J.P. Bolte, M.M. Cox, S.L. Johnson, W.J. Liss, W.G. Boggess, J.L. Ebersole. 2005. Toward efficient riparian restoration: integrating economic, physical, and biological models. *J. Env. Management* 75(2): 93-104.

K.B. Vaché, McDonnell, J., Bolte, J.P. 2004. On the use of multiple criteria for a posteriori model rejection: Soft data to characterize model performance. *Geophysical Research Letters*. 31:L21504.

Berger, P.A. and J.P. Bolte. 2004. Evaluating the impact of policy options on agricultural landscapes: an alternative futures approach. *Ecological Applications*. 14(2):342-354.

Meleason, M.A., S.V. Gregory, and J. Bolte. 2003. Implications of selected riparian management strategies on wood in Cascade Mountain streams of the Pacific Northwest. *Ecological Applications* 13:1212-1221.

Brugnach, M., J.P. Bolte and G.A. Bradshaw. 2002. Determining the significance of threshold values uncertainty in rule-based classification models. *Ecological Modeling*. 160:63-67.

Hillyer, C., J. Bolte, F. VanEvert, and A. Lamaker. 2002. The MODCOM modular simulation system. *European Journal of Agronomy*. 18(3):333-343.

Lamy, F., J.P. Bolte, M. Santelmann and C. Smith. 2002. Development and Evaluation of Multiple Objective Decision-Making Methods for Watershed Management Planning. *J.Amer.Water Resources Assoc.* 38(2):517-529.

Nath, S., J.P. Bolte, L.G. Ross, and J. Aguilar-Manjarrez. 2000. Applications of Geographical Information Systems (GIS) For Spatial Decision Support in Aquaculture. *Aquacultural Engineering* 23:233-278.

Hill, D. T. and J.P. Bolte, 2000. Methane Production from Low Solids Concentration Liquid Swine Waste Using Conventional Anaerobic Fermentation. *BioResource Technology*, Vol. 74, No. 3, pp 241-247.

Bolte, J.P., S. Nath and D. Ernst. 2000. Development of Decision Support Tools for Aquaculture: The POND Experience. *Aquacultural Engineering*. 23:103-120.

Ernst, D.H., Bolte, J.P., Nath, S.S. 2000. AquaFarm: simulation and decision support for aquaculture facility design and management planning. *Aquacultural Engineering* (23)1-3:121-179.

Fenske, J.J., M.H. Penner, and J.P. Bolte. 1999. A simple individual-based model of insoluble polysaccharide hydrolysis: the potential for autsynergism with dual-activity glycosidases. *J. Theor. Biology*, Vol. 199, No. 1, Jul 1999, pp. 113-118.

Nath, S.S. and Bolte, J.P. 1998. A water budget model for pond aquaculture. *Aquacultural Engineering*. 18 (3): pp. 175-188.

Bolte, J.P. 1998. Object-oriented programming for decision systems. In: *Agricultural Systems Modeling* R. Peart and B. Curry, Editors. Marcel Dekker, Inc. New York

Bolte, J.P. 1996. Integrative frameworks for decisionmaking in resource management. In: *Proceedings of the Ninth Florida Artificial Intelligence Research Symposium*, J.H. Stewman, Editor. Key West, Florida, May 20-22, 1996.

Peters, G., M.T. Morrissey, G. Sylvia, and J.P. Bolte. 1996. Linear regression, neural network, and induction analysis to determine harvesting and processing effects on surimi quality. *J. Food Science*. 61(5): 876-880.

Bolte, J.P. and D.T. Hill. 1993. A comprehensive dynamic model of attached growth anaerobic fermenters. *Transactions of the ASAE*. 36(6):1805-1814.

Hannaway, D.B., J.P. Bolte, P.E. Shuler and M.J. Miller. 1992. Development and evaluation of LEGUME ID: a Toolbook multimedia module. *J. of Nat. Res. and Life Sci. Educ.* 21:57-61.

Hannaway, D.B., J.P. Bolte, P.E. Shuler, P.J. Ballerstedt, M. BenYounes. 1992. ACE: Alfalfa cultivar expert. *Journal of Production Agriculture*. 5:85-88.

Bolte, J.P., D.B. Hannaway, P.E. Shuler and P.J. Ballerstedt. 1991. An intelligent frame system for cultivar selection. *A.I. Applications in Natural Resource Management*. 5(3):21-31.

Hill, D.T. and J.P. Bolte. 1991. Bioretentive properties of synthetic media for anaerobic digestion of animal wastes. *Biological Wastes*. 35(2):711-715.

Bolte, J.P. and D.T. Hill. 1990. A Monod-based model of attached growth anaerobic fermenters. *Biological Wastes*. 31:275-290.

Hill, D.T. and J.P. Bolte. 1989. Digester stress as related to isobutyric and isovaleric acids. *Biological Wastes*. 28:33-37.

Hill, D.T. and J.P. Bolte. 1988. Synthetic fixed media reactor performance treating screened swine waste liquids. *Transactions of the ASAE*. 31(5):1525-1531.

Hill, D.T. and J.P. Bolte. 1987. Modeling fatty acid relationships in animal waste anaerobic digesters. *Transactions of the ASAE*. 30(2):502-508.

Hill, D.T., S.A. Cobb and J.P. Bolte. 1987. Using volatile fatty acid relationships to predict anaerobic digester failure. *Transactions of the ASAE*. 30(2):496-501.

Bolte, J.P., D.T. Hill and T.H. Wood. 1986. Anaerobic digestion of screened swine waste liquids in suspended particle-attached growth reactors. *Transactions of the ASAE*. 29(2):543-549.

Hill, D.T., J.P. Bolte and T.J. Prince. 1986. Thermophilic anaerobic digestion of screened-flushed swine waste. *Transactions of the ASAE*. 29(1):229-234.

Hill, D.T. and J.P. Bolte. 1986. Characteristics of whole and scraped swine waste as substrates for continuously-expanding anaerobic digestion systems. *Biological Wastes*. 16(2):147-156.

Hill, D.T. and J.P. Bolte. 1985. Comparison of surface-scraped and flushed-screened swine waste as a methane substrate for thermophilic digestion. *Transactions of the ASAE*. 28(3):870-874.

Hill, D.T., R.D. Holmberg and J.P. Bolte. 1985. Operating and performance characteristics of scraped swine manure as a thermophilic anaerobic digestion substrate. *Agricultural Wastes*. 14(1):37-51.

Bolte, J.P., R.A. Nordstedt and M.V. Thomas. 1984. Mathematical simulation of upflow anaerobic fixed-bed reactors. *Transactions of the ASAE*. 25(5):1483-1490.

Invited Presentations at Professional Meetings:

Bolte, J.P. 1996. Integrative frameworks for decisionmaking in resource management. In: *Proceedings of the Ninth Florida Artificial Intelligence Research Symposium*, J.H. Stewman, Editor. Key West, Florida, May 20-22, 1996.

Bolte, J.P. 1988. Expert systems for horticulture. Presented at the 1988 Oregon Horticulture Society Meeting. January 26-28, 1988. Portland, Oregon.

Bolte, J.P. 1987. Expert systems applications in agricultural extension programs. Presented at the 1987 Western Regional Coordinating Committee for Extension Meeting. July 21-22, 1987. Reno, Nevada.

Invited Workshops:

Bolte, J.P. and F. VanEvert. Workshop: Use of MODCOM for developing modular simulations. 2002. Florence, Italy.

Bolte, J.P. 1990. Workshop on Expert Systems Development in Agriculture. January 8-9, 1990. Cornell University. Ithaca, NY.

Symposia/Published Proceedings:

Meleason, M.A., Gregory, S.V., and Bolte, J. 2002. Simulation of stream wood source distance for small streams in the western Cascades, Oregon. Pages 457-466. in W. F. Laudenslayer, P. J. Shea, B. E. Valentine, C. Weatherspoon, L. Phillip, and E. Thomas editors. *Proceedings of the symposium on the ecology and management of dead wood in western forests*. PSW-GTR-181 Pacific Southwest Research Station, USDA FS, Albany, CA.

Meleason, M. A., S.V. Gregory, and J. Bolte. 1999. Simulation of stream wood source distance for small streams in the Western Cascades, Oregon. In: *Proceeding of the Symposium on the Ecology and Management of Dead Wood in Western Forest*. November 2-4 1999, Reno NV. Western Section of the Wildlife Society.

Meleason, M. A., S.V. Gregory, and J. Bolte. 1999. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for oral presentation]. In: *American Fisheries Society Oregon Chapter 35th Annual Meeting, Working together for solutions: How do we get there from here?* February 10 -12, Sunriver, Oregon. p.29

Meleason, M. A., S.V. Gregory, and J. Bolte. 1999. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for poster presentation]. In: H.J. Andrews Experimental Forest Long-Term Ecological Research Site Second Annual Symposium. February 18, Oregon State University, Corvallis OR. p12.

Meleason, M. A., S.V. Gregory, and J. Bolte. 1999. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for Oral Presentation]. In: The Ecological Society of America 84th annual meeting: Legacies, landscapes and limits: bridging borders. August 8-12, Spokane, WA. Washington, DC: Ecological Society of America. p147.

Meleason, M. A., S.V. Gregory, and J. Bolte. 1999. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for Oral Presentation]. In: Western Section of the Wildlife Society. Symposium on the Ecology and Management of Dead Wood in Western Forest. November 2-4, Reno NV.

Meleason, M. A., S.V. Gregory, and J. Bolte. 2000. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for poster presentation]. In: H.J. Andrews Experimental Forest Third Annual Symposium. March 2, Oregon State University, Corvallis OR. p7.

Meleason, M. A., S.V. Gregory, and J. Bolte. 2000. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for Oral Presentation]. Bulletin of the North American Benthological Society 17(1):141.

Meleason, M. A., S.V. Gregory, and J. Bolte. 2000. Simulation of large wood dynamics in small streams of the Pacific Northwest. [Abstract for Oral Presentation]. In: International Conference on Wood in World Rivers. October 23-27, Oregon State University, Corvallis OR.

Nath, S.S., J.P. Bolte, and D.H. Ernst. 1995. Decision support for pond aquaculture planning and management. Proceedings: Sustainable Aquaculture 95. June 11-14, 1995, Honolulu, HI.

Peters, G., M.T. Morrissey, J.P. Bolte, and G. Sylvia. 1994. Determination of quality parameters for Pacific whiting using computer analysis techniques. Proceedings: Conference on New Developments in Seafood Science and Technology. Canadian Institute of Food Technology, Vancouver, BC.

Bolte, J.P., J.A. Fisher, and D.H. Ernst. 1993. An object-oriented, message-based environment for integrating continuous, event-driven and knowledge-based simulation. Proceedings: Application of Advanced Information Technologies: Effective Management of Natural Resources. ASAE. June 18-19, Spokane, WA.

Ernst, D.H., J.P. Bolte and S. Nath. 1993. A decision support system for finfish aquaculture. Proceedings: Application of Engineering in Aquaculture. ASAE. June 21-22, Spokane, WA.

Bolte, J.P., D. Ernst and R. Charon. 1990. Development of a decision support system for salmon hatchery management. Proceedings of the 41st Annual Northwest Fish Culture Conference. Salishan, OR.

Bolte, J.P. and D.T. Hill. 1985. Modeling suspended particle-attached growth anaerobic reactors. Proceedings of the Fifth International Conference on Agricultural Wastes. ASAE, St. Joseph, MI.

Hill, D.T., J.P. Bolte, T.J. Prince and T.A. McCaskey. 1985. Operating characteristics of suspended particle-attached growth anaerobic fermenters treating screened swine waste. Proceedings of the Fifth International Symposium on Agricultural Wastes. ASAE, St. Joseph, MI.

Symposia/Unpublished Proceedings:

Bolte, J.P. and D.N. Moss. 1988. Development of Decision Support Systems for Wheat Growers in the Columbia Basin. Presented at the 1988 STEEP Meeting. January 6-8, 1988. Richland, Washington.

Bolte, J.P. and D.T. Hill. 1986. Kinetics of attached growth reactor systems. Presented at the Fourth Annual Southern Biomass Energy Research Conference, University of Georgia, Athens, GA.

Bolte, J.P. and D.T. Hill. 1983. Kinetics of fixed-film anaerobic reactors. Presented at the Second Annual Southern Biomass Energy Research Conference, University of Alabama, Tuscaloosa, AL.

Papers Presented at Professional Meetings:

Balzer, J, Bolte, J., Burns, L., & Sanderson, R. 1999. OSU's AnswerDesk Web Site: Survival Services for Students. Presented at the Region 8 meeting of the National Academic Advising Association. Ocean Shores Washington.

Bolte, J.P. and S.S. Nath. 1998. Geographic information system technologies for aquaculture decision support. World Aquaculture Society Annual Meeting. Las Vegas.

Bolte, J.P., S.S. Nath, P. Darakjian, J.M. Kapetsky. 1996. Regional-scale analysis of aquaculture development potential. Poster presented at the 1996 World Aquaculture Society Meeting, Bangkok, Thailand.

Canpolat, N. and J.P. Bolte. 1993. Object-oriented implementation of the CERES-Wheat model. ASAE Paper 934052. ASAE, St. Joseph, MI.

Bolte, J.P., D. Ernst and J. Fisher. 1991. Coupling a graphical user interface with an object oriented model of salmon hatcheries. ASAE Paper 91----. ASAE. St Joseph, MI.

Bolte, J.P., J. Fisher and D. Ernst. 1991. Intelligent agent-based optimization of a salmon hatchery model. ASAE Paper 917566. ASAE. St Joseph, MI.

Bolte, J.P. and D. Hannaway. 1990. An expert system for alfalfa cultivar selection. ASAE Paper 907019. ASAE, St. Joseph, MI.

Bolte, J.P. 1989. Application of neural networks in agriculture. ASAE Paper 897591. ASAE. St. Joseph, MI.

Bolte, J.P., L. Burrill and A. Appleby. 1989. A frame-based expert system for herbicide recommendation. ASAE Paper 897076. ASAE, St. Joseph, MI.

Bolte, J.P. and P. Shuler. 1989. A mixed-representation expert system for advising students. ASAE Paper 893039. ASAE, St. Joseph, MI.

Bolte, J.P., D.N. Moss, L. Burrill and A. Appleby. 1988. A herbicide recommendation expert system. ASA Paper No. SS-24. Presented at the 1988 American Society of Agronomy Meeting. Anaheim, California.

Bolte, J.P., A. Appleby and L. Burrill. 1988. A herbicide recommendation expert system for the Pacific Northwest. ASAE Paper No. PNR 88-103. Presented at the 1988 Pacific Northwest Regional ASAE Meeting. September 28-30, 1988, Pendleton, Oregon.

Shuler, P.E., D.B. Hannaway, J.P. Bolte, and L. O'Hare. 1988. A decision support system for recordkeeping and advising undergraduate students in Crop Science. Presented at the American Society of Agronomy Meeting. Anaheim, California.

Bolte, J.P., R.O. Smitherman and D.T. Hill. 1986. Applications of mathematical modeling to pond aquaculture: a state-of-the-art review. ASAE Paper No. 86-5049. ASAE, St. Joseph, MI.

Bolte, J.P., D.T. Hill and S.A. Cobb. 1986. Characterization of biomass support particles for suspended particle-attached growth anaerobic fermenters. ASAE Paper No. 86-3073. ASAE, St. Joseph, MI.

Hill, D.T. and J.P. Bolte. 1986. Operating characteristics of suspended particle-attached growth fermenters treating screened swine waste. ASAE Paper No. 86-3074. ASAE, St. Joseph, MI.

Hill, D.T. and J.P. Bolte. 1984. Characteristics of screened-flushed swine waste as a methane substrate. ASAE Paper No. 84-4093. ASAE, St. Joseph, MI.

Bulletins:

Bolte, J.P. and D.T. Hill. 1986. A new technology for producing methane from swine manure. Highlights of Agricultural Research. 33(1):6.

Hill, D.T., T.J. Prince and J.P. Bolte. 1986. An overview of agricultural waste management research at Auburn University. Highlights of Agricultural Research. 33(3).

Hill, D.T. and J.P. Bolte. 1984. Using reconcentrated swine waste for methane production has practical applications. Highlights of Agricultural Research. 31(3):15.

Book Chapters:

Bolte, J.P. 1998. Object-oriented programming for decision systems. In: Agricultural Systems Modeling R. Peart and B. Curry, Editors. p629-650. Marcel Dekker, Inc. New York

Piedrahita, R., S. Nath, J.P. Bolte, and D. Ernst. 1997. Modeling Aquaculture Systems. In: Dynamics of Pond Aquaculture, C.E. Boyd and H.S. Egna, Eds. CRC Press, Inc., Boca Raton, FL.

Book Reviews:

Bolte, J.P. 1997. Building Knowledge-based Systems for Natural Resource Management. *Northwest Science* 71(4):340-341.

Reports:

Nath, S.S., J.P. Bolte, and D.H. Ernst. 1997. Applications of POND as a Tool for Analysis and Planning. Fourteenth Annual Administrative Report, PD/A CRSP, Corvallis OR.

Nath, S.S., J.P. Bolte, P. Darakjian and J.M. Kapetsky. 1997. Applications of POND models for Continental-scale Assessment of Aquaculture Potential in Latin America. Fourteenth Annual Administrative Report, PD/A CRSP, Corvallis OR.

Bolte, J.P. and S.S. Nath, 1996. Decision Support for Pond Aquaculture: Parameter Estimation Techniques. Thirteenth Annual Administrative Report, PD/A CRSP, Corvallis OR.

Nath, S.S., J.P. Bolte, and D.H. Ernst, 1996. Decision Support for Pond Aquaculture: Simulation Models and Applications. Thirteenth Annual Administrative Report, PD/A CRSP, Corvallis OR.

Bolte, J.P. and A. Van Nalts. 1996. Analysis of Global Climate Change Effects on Rice Production: Final Report. Environmental Protection Agency Cooperative Agreement CR-820408.

Bolte, J.P., S.S. Nath, and D.H. Ernst. 1995. POND: A Decision Support System for Pond Aquaculture. Twelfth Annual Administrative Report, PD/A CRSP, Corvallis, OR.

Bolte, J.P. and S. S. Nath. 1994. Decision Support Systems for Warmwater Aquaculture: Annual Report. Pond Dynamics/Aquaculture Collaborative Research and Support Program, USAID.

Ph.D Dissertation:

Bolte, J.P. 1987. A Comprehensive Mathematical Model of Attached Growth Anaerobic Fermenters. Ph.D Dissertation, Agricultural Engineering Department, Auburn University, AL.

Master's Thesis:

Bolte, J.P. 1983. Dynamic Modeling and Simulation of Fixed-bed Anaerobic Reactors. Master's Thesis, Agricultural Engineering Department, University of Florida, Gainesville, FL.

Software Developed:

RESTORE	- Restoration Planning Tool
EVOLAND	- Alternative Futures Scenario Development and Analysis Tool
MODCOM	- Modular Continuous/Discrete Simulation Framework
ACE	- Alfalfa Cultivar Expert System
GMX	- Grain Marketing Expert System

GRAINMAN - PNW Grain Irrigation and Fertilization Advisory Expert System
OSU-SHELL - Expert System Development Environment
CropSim - Objected Oriented Crop Simulator for Microsoft Windows
MCalcII - Manure Management Decision Tool for Microsoft Windows
EcoSim - Graphical Simulation Development Tool fo Microsoft Windows
SimEnv - Object-oriented C++ simulation framework
Weeder - Frame-based weed management database and decision tool
Pond - Aquacultural Pond Management Simulator and Decision Support
Aquafarm - Salmon Hatchery Resource and Production Simulator
Genex - Salmon genetic management expert system
GPP - Genetic algorithm analysis tool
Geosim - Spatial analysis and modeling tool
Biot - Artificial Life development and analysis tool

Grants and Contracts:

~\$5,287,638 generated at OSU as Principal Investigator or Co-principal Investigator.

A) Principal Investigator or Co-Principal Investigator

Partnership in Ecosystem Research. Principal Investigator. 4/03-3/06.

Source: EPA

Amount: \$41,886

Training Coop Operations. Principal Investigator. 4/05-3/08

Source: EPA

Amount: \$43,326

Training Coop Operations. Principal Investigator. 4/05-3/08

Source: EPA

Amount: \$46,924

Coupled Human/Riverine Systems – Multiagent Modeling. Co-Principal Investigator. 10/02-present

Source: NSF

Amount: \$1,950,000

Sustainability Decision Support Systems. Principal Invesigator. 6/05-present.

Source: NASA

Amount: \$288,365

Pacific Northwest Regional Collaboratory. Principal Investigator. 6/04-6/05.

Source: NASA

Amount: \$162,592

Customizing the RESTORE tool for Portland. Principal Investigator. 4/05-3/05.

Source: Clean Water Services

Amount: \$31,572

Development and Implementation of Decision Support Tools for Watershed Restoration. Principal Investigator. 10/96-9/01.

Source: EPA

Amount: \$809,903

Ecorisk Assessment: Watershed Modeling of Pesticide Distributions. Co-principal Investigator. 1/03-12/04.

Source: Oregon DEQ

Amount: \$86,468

Development of Tools for Modular Ecological Modeling. Principal Investigator. 10/01-9/04.

Source: EPA

Amount: \$247,394

Optimum Irrigation Management. Co-principal Investigator. 11/03 – Present.

Source: USDA

Amount: \$289,000

Using GIS and Remote Sensing for Crop Suitability. Co-principal Investigator 3/03 – 6/05.

Source: USDA

Amount: \$44,850

Developing an On-line Irrigation Management Program Co-principal Investigator. 2/05 – Present.

Source: USDA

Amount: \$50,964

Agricultural Landscape Impacts on Ecosystem Management in the Willamette Basin. Principal Investigator. 10/1/95-9/30/97.

Source: EPA Pacific Northwest Environmental Research Consortium

Amount: \$66,000

Effect of Agricultural Land Use on Native Fish in the Willamette Basin. Co-principal Investigator. 10/1/97-9/30/2000

Source: USDA National Research Initiative

Amount: \$205,566

Effect of Land Use on Fish Distributions. Principal Investigator. 6/02-6/03

Source: Murdock Foundation

Amount: \$14,000

Development of Decision Support Systems for Pond Management. Principal Investigator. 10/1/96-6/30/97.

Source: USAID Pond Dynamics/Aquaculture Collaborative Research Support Program

Amount: \$86,000

PD/A CRSP Database Management and Development. Principal Investigator. 10/1/96-6/30/97.

Source: USAID Pond Dynamics/Aquaculture Collaborative Research Support Program

Amount: \$52,522

Pond Dynamics/Aquaculture - Development of Physico-economic models for optimizing pond production. Principal Investigator. 5/1/93-4/30/95.

Source: USAID Pond Dynamics/Aquaculture Collaborative Research Support Program

Amount: \$109,119

Analysis of Global Climate Change Effects on Rice Production. Principal Investigator. 10/1/92-9/30/95

Source: EPA

Amount: \$149,956

Integrating Crop Models and Expert Systems for Crop Management Decision Support. Principal Investigator 7/1/92 - 6/30/95

Source: STEEP

Amount: \$27,569

Integrating Crop Models and Expert Systems for Crop Management Decision Support. Principal Investigator. 7/1/91 - 6/30/94

Source: STEEP

Amount: \$22,000

Geographic Information Systems for Bioresource Engineering Research. Principal Investigator. 7/1/90 - 6/30/91.

Source: Agricultural Engineering Research Foundation

Amount: \$4850

Development of a Decision Support System for Irrigation and Fertilization Management in the Columbia Basin. Principal Investigator. 9/1/90 - 8/31/93.

Source: STEEP

Amount: \$19,850

Simulation and Optimization of Salmon Hatchery Production in the Columbia Basin. Principal Investigator. 10/1/89 - 9/30/92.

Source: DOE/BPA

Amount: \$360,000

Calibration of the CERES-Wheat Crop Growth Model to Oregon Environments. Co-Principal Investigator. 9/1/89 - 8/31/92.

Source: STEEP

Amount: \$20,000

Development of Economic Planning Decision Support Systems for Wheat Producers in the Columbia Basin. Principal Investigator. 9/1/89 - 8/31/92.

Source: STEEP

Amount: \$19,850

Development of a Herbicide Recommendation Expert System for Pacific Northwest Crops. Principal Investigator. 7/1/89 - 5/15/90.

Source: OSU Research Council

Amount: \$3,944

Crop Models and Expert Systems as Vehicles for Technology Transfer. Co-Principal Investigator. 7/1/88 - 6/30/91.

Principal Investigator: Dale Moss

Source: STEEP

Amount: \$19,868

Real-time Weather Data Acquisition for an Expert Decision Support System for Managing Wheat.

Principal Investigator. 7/1/88 - 6/30/91.

Source: STEEP

Amount: \$13,300

B) Cooperator

Evaluating the Effect of Management Practices on Soil Erosion and Water Quality. Principal

Investigator: Greg Perry (Ag. and Res. Econ.)

Source: STEEP

Amount: \$21,852

Russian Wheat Aphid Management in the Northwest. Major Cooperator.

Principal Investigator: Keith Pike (Wash. State Univ.)

Source: USDA/CRSR

Amount: \$22,588

The Interaction of Water, Temperature, and Nitrogen Stresses on the Development and Yield of Wheat. Principal Investigator: Dale Moss (Crop and Soil Science)

Source: STEEP

Amount: \$30,575

Tualatin Basin Pollution Assessment Study. Principal Investigator: Benno Warkentin (WRRRI).

Source: Oregon Department of Environmental Quality

Amount: \$329,988

SERVICE

University Service

- Interim Director, Oregon State University Institute for Water and Watersheds. (2005-present) Responsibilities include overseeing establishment and start-up of the Institute, managing the Institute budget, supervising staff, and identifying/implementing Institute goals
- Chair, Executive Committee, Institute for Water and Watersheds (2005-present)
- Search Committee – Director, Institute For Water and Watersheds (2005)
- Research Council (2001-2004)
- College of Engineering Leadership Team (2001-present) Faculty Senate (1991 – 1993; 2004-Present)
- College of Agriculture Leadership Team (2001-present)

- College of Engineering Computer Policy Committee (1991-1992)
- College of Engineering Computer User's Committee (1990-1991)
- Curriculum Committee, Bioresource Engineering (1991-1992, 1993-1994)
- Graduate Committee, Bioresource Engineering (1989 - 1991,1994-present,Chair: 1996-97)
- Computer Committee, Bioresource Engineering Department (1989 - present)
- Computer Committee, Crop and Soil Science Department (1987 - present)

Public Service related to my professional training

- Benton County Planning Commission, 1996-present (Chair, 1998-2004)
- Benton County Corrections Siting and Design Committee (1998-2000)
- Extensive work with a variety of Watershed Councils