Bernard Engel

Ph.D. Purdue University - 1988

Department Head/ Professor

ESCOP/ACOP Leadership Fellow, 1996-1997
Engineering Best Teacher Award, Agric. and Biological Engineering, Purdue University, 1996
School of Agriculture Outstanding Researcher, Purdue University, 1998
University Scholar, Purdue University, 1999-2003
ASAE Outstanding Young Researcher Award, 1999
Outstanding Graduate Educator, College of Agriculture, 2006

Research Areas:

Information Systems Soil & Water Resource Engineering. Hydrologic/water quality modeling. GIS, expert systems, simulation. Management of natural resources including water quality.

Classes Taught:

ASM 336 – Environmental Systems Management
ABE 526 Watershed Systems Design
ABE 590 GIS Project Design
ABE 697 Graduate Seminar

Selected Publications (last 5 years):

Govindaraju, R.S., B. Engel, D. Ebert, B. Fossum, M. Huber, C. Jafvert, S. Kumar, V. Merwade, D. Niyogi, L. Oliver, S. Prabhakar, G. Rochon, C. Song, and L. Zhao. 2009. Vision of Cyberinfrastructure for End-to-End Environmental Explorations (C4E4), J. Hydrologic Engrg. Volume 14, Issue 1, pp. 53-64.

Gaffer, R., D. Flanagan, M. Denight, B. Engel. 2008. Geographical information system erosion assessment at a military training site. Journal of Soil and Water Conservation 63(1):1-10.

Rochon, G., C. Johannsen, D. Landgrebe, B. Engel, J. Harbor, S. Majumder, and L. Biehl. 2008. Remote sensing as a tool for achieving and monitoring progress toward sustainability. Clean Technologies and Environmental Policy 5(3-4):310-316.

Quansah, J., B.A. Engel, I. Chaubey. 2008. Tillage practices usage in early warning prediction of atrazine pollution. TRANS of ASABE 51(4):1311-1321.

Larose, M., G. Heathman, L.D. Norton, B. Engel. 2007. Hydrologic and atrazine simulation of the Cedar Creek watershed using the SWAT model. Journal of Environmental Quality 36:521-531.

Pantaleoni, E., B.A. Engel, C.J. Johannsen. 2007. Identifying agricultural flood damage using Landsat imagery. Precision Agriculture 8:27-36.

Hamilton, R. M. , R. E. Foster, T. J. Gibb, C. S. Sadof, J. D. Holland, and B. A. Engel. 2007. Distribution and dynamics of Japanese beetles along the Indianapolis airport perimeter and the influence of land use on trap catch. Environ. Entomol. 36(2): 287-296.

Zhao, L., C. X. Song, V. Merwade, Y. M. Kim, R. Kalyanam, D. Ebert, B. Engel, R. Govindaraju, M. Huber, C. Jafvert, D. Niyogi and S. Prabhakar. 2007. Interweaving data and computation for end-to-end environmental exploration on the TeraGrid. Proceedings of the TeraGrid 2007 Conference, Madison, Wisconsin.

Arabi, M., R. S. Govindaraju, B. Engel, and M. Hantush. 2007. Multiobjective sensitivity analysis of sediment and nitrogen processes with a watershed model, Water Resour. Res., 43, W06409, doi:10.1029/2006WR005463.

Engel, B., D. Storm, M. White, J. Arnold, M. Arabi. 2007. A Hydrologic/Water Quality Model Application Protocol. J. of American Water Resources Association 43(5), 1223-1236.

Thomas, M.A., B.A. Engel, M. Arabi, T. Zhai, R. Farnsworth, J.R. Frankenberger, 2007. Evaluation of nutrient management plans using an integrated modeling approach. Applied Engineering in Agriculture 23(6): 747-755.

Muthukrishnan, S., J. Harbor, K. J. Lim, and B. A. Engel. 2006. Calibration of a Simple Rainfall-runoff Model for Long-term Hydrological Impact Evaluation. Journal of Urban and Regional Information Systems Association 18(2):35-42.

Arabi, M., R. S. Govindaraju, M. M. Hantush, and B. A. Engel. 2006. Role of watershed subdivision on modeling the effectiveness of best management practices with SWAT. Journal of American Water Resources Assoc. 42(2):513-528.

Bracmort, K. S., M. Arabi, J. R. Frankenberger, B. A. Engel, and J. G. Arnold. 2006. Modeling long-term water quality impact of structural BMPs. Trans. of ASABE 49(2):367-374.

G. Vazquez-Amabile, B. A. Engel, D. C. Flanagan. 2006. Modeling and risk analysis of nonpoint-source pollution caused by atrazine using SWAT. Trans. of ASABE 49(3): 667−678

Mercuri, P., B. Engel, C. Johannsen. 2006. Evaluation and accuracy assessment of high-resolution IFSAR DEMs in low-relief areas. International Journal of Remote Sensing 27(13):2767-2786.

Choi, J-Y, B. A. Engel, and R. Farnsworth. 2005. Web-based GIS and spatial decision support system for watershed management. Journal of Hydroinformatics 7(3):165-174.

Frimpong, E.A., T. M. Sutton, K.J. Lim, P. J. Hrodey, B. A. Engel, T. P. Simon, J. G. Lee, and D.C. Le Master. 2005. Determination of optimal riparian forest buffer dimensions for stream biota–landscape association models using multimetric and multivariate responses. Can. J. Fish. Aquat. Sci. 62: 1–6.

Vazquez-Amabile, G.G., and B.A. Engel. 2005. Use of SWAT to Compute Groundwater Table Depth and Streamflow in the Muscatatuck River Watershed. Trans. of the ASAE 48(3):991-1003.

Tang, Z., B.A. Engel, B.C. Pijanowski, K.J. Lim. 2005. Forecasting land use change and its environmental impact at a watershed scale. Journal of Environmental Management 76(1):35-45.

Saxton G. and B. Engel. 2005. A Survey of Soil Sample Handling Procedures of State Pesticide Regulatory Agencies. Journal of Environmental Forensics 6(2):105-108.

Mitchell Adeuya, R. K., K. J. Lim, B. A. Engel, M. A. Thomas. 2005. Modeling the average annual nutrient losses of two watersheds in Indiana using GLEAMS-NAPRA. Transactions of the ASAE Vol. 48(5): 1739−1749.

Saxton, G. and B. Engel. 2005. Permethrin Insecticide and Soil Sample Handling Techniques of State Regulatory Agencies. Environmental Forensics 6(4):327-333.

Frimpong, E., T. Sutton, B. Engel, T. Simon. 2005. Spatial-Scale Effects on Relative Importance of Physical Habitat Predictors of Stream Health. J. of Environmental Management 36(6):899-917.

Lim, K.J., B.A. Engel, Z. Tang, S. Muthukrishnan, J. Choi, K. Kim. 2005. Effects of calibration on L-THIA GIS runoff and pollutant estimation. Journal of Environmental Management.

Lim, K.J., M. Sagong, B.A. Engel, Z. Tang, J. Choi and K. Kim. 2005. GIS-based sediment assessment tool. CATENA 64(1):61-80. doi:10.1016/j.catena.2005.06.013