

Bernard A. Engel, Ph.D., P.E.

- PhD, 1988, Agricultural Engineering, Purdue University
- MS, 1985, Agricultural Engineering, University of Illinois
- BS, 1984, Agricultural Engineering, University of Illinois

Academic Experience:

- Founding Director, Purdue University Discovery Park Center for the Environment, 2005-2006
- Head, Agricultural & Biological Engineering, Purdue University, 2005 – present
- Interim Head, Agricultural & Biological Engineering, Purdue University, 2004 – 2005
- Professor, Agricultural & Biological Engineering, Purdue University, 1996 – present
- Associate Professor, Purdue University, 1992 – 1996
- Assistant Professor, Purdue University, 1988 – 1992

Other:

- Research Engineer (sabbatical), NASA Kennedy Space Center (KSC), KSC, FL and US Army Construction Engineering Research Laboratory, Champaign, IL, 1994 -1995

Certifications: Professional Engineer, Indiana, 1995 - present

Professional Organizations: American Society of Agricultural Engineers, National Society of Professional Engineers, Soil and Water Conservation Society, American Society of Civil Engineers, Sigma Xi, Phi Kappa Phi, Alpha Epsilon, Gamma Sigma Delta, Alpha Mu

Honors and Awards (past five years):

- ASABE Fellow, 2014
- Recognized among the 8 most productive authors globally in nonpoint source pollution modeling research (Li et al. 2014, JSWC 69(4), doi: 10.2489/jswc.69.4.121A)
- Gilley Academic Leadership Award, ASABE, 2016
- Distinguished Faculty for Research, Purdue University Residential Academics Initiative, 2018

Service Activities (past five years):

Internal: Forestry and Natural Resources Head Search Chair; Agricultural Economics Head Search Chair; University COACHE Committee, College of Agriculture strategic planning committee

External: US EPA Scientific Advisory Panel to the Food Quality Protection Act Implementation Team, US EPA FIFRA Scientific Advisory Panel Member, FieldWatch Board Member

Selected Publications (last 3 years)

1. Liu, Y., L.O. Theller, B.C. Pijanowski, and B.A. Engel. 2016. Optimal selection and placement of green infrastructure to reduce impacts of land use change and climate change on hydrology and water quality: An application to the Trail Creek Watershed, Indiana. *Science of the Total Environment* 553 (2016) 149–163. [dx.doi.org/10.1016/j.scitotenv.2016.02.116](https://doi.org/10.1016/j.scitotenv.2016.02.116).
2. Sun, S., Y. Wang, B.A. Engel, and P. Wu. 2016. Effects of virtual water flow on regional water resources stress: A case study of grain in China. *Science of The Total Environment*. Vol. 550. April 2016. pp. 871-879.

3. Wallace, C.W., Flanagan, D.C., and B.A. Engel. 2017. Quantifying the effects of conservation practice implementation on predicted runoff and chemical losses under climate change. *Agric. Water Manage.* 186(2017): 51-65.
4. Liu Y., B.A. Engel, D.C. Flanagan, M.W. Gitau, S.K. McMillan, and I. Chaubey. 2017. A review on effectiveness of best management practices in improving hydrology and water quality: Needs and opportunities. *Science of the Total Environment* 601–602 (2017) 580–593 <http://dx.doi.org/10.1016/j.scitotenv.2017.05.212>
5. Li, S., M. Gitau, B. A. Engel, L. Zhang, Y. Du, C. Wallace and D. C. Flanagan. 2017. Development of a distributed hydrological model to facilitate watershed management. *Hydrological Sciences Journal* Vol. 62 , Iss. 11,2017.
6. Li S, Gitau M, Bosch D, Engel BA, Zhang L, Y. Du. 2017. Development of a soil moisture-based distributed hydrologic model for determining hydrologically based critical source areas. *Hydrological Processes.* 2017;31:3543–3557. <https://doi.org/10.1002/hyp.11276>
7. Liu, Y., B.A. Engel, P.D. Collingsworth, and B.C. Pijanowski. 2017. Optimal implementation of green infrastructure practices to minimize influences of land use change and climate change on hydrology and water quality: Case study in Spy Run Creek watershed, Indiana. *Science of The Total Environment*, Volumes 601–602, 1 December 2017, Pages 1400-1411.
8. Guo, T., Gitau, M., Merwade, V., Arnold, J. G., Srinivasan, R., Hirschi, M. C., and B.A. Engel. 2018. Comparison of performance of tile drainage routines in SWAT 2009 and 2012 in an extensively tile-drained watershed in the Midwest. *Hydrology and Earth System Sciences.* 22(1), 89. DOI: 10.5194/hess-22-89-2018. <https://doi.org/10.5194/hess-22-89-2018>.
9. Guo, T., Cibin, R., Chaubey, I., Gitau, M., Arnold, J. G., Srinivasan, R., Kiniry, J. & Engel, B. A. 2018. Evaluation of bioenergy crop growth and the impacts of bioenergy crops on streamflow, tile drain flow and nutrient losses in an extensively tile-drained watershed using SWAT. *Science of the Total Environment*, 613, 724-735. DOI: 10.1016/j.scitotenv.2017.09.148. <https://doi.org/10.1016/j.scitotenv.2017.09.148>.
10. Cho, Y. and B.A. Engel. 2018. Spatially distributed long-term hydrologic simulation using a continuous SCS CN method-based hybrid hydrologic model. *Hydrological Processes.* 2018;32:904–922. DOI: 10.1002/hyp.11463.
11. Xu, T., B. A. Engel, X. Shi, L. Leng, H. Jia, S. L. Yu, Y. Liu. 2018. Marginal-cost-based greedy strategy (MCGS): Fast and reliable optimization of low impact development (LID) layout. *Science of the Total Environment* 640–641 (2018) 570–580. <https://doi.org/10.1016/j.scitotenv.2018.05.358> 0048-9697
12. Chen, J., M.W. Gitau, B.A. Engel, and D.C. Flanagan. 2018. Suitability of CLIGEN precipitation estimates based on an updated database and their impacts on urban runoff: a case study of the Great Lakes Region, USA, *Hydrological Sciences Journal*, DOI: 10.1080/02626667.2018.1513655
13. Cho, Y., B.A. Engel and V.M. Merwade. 2018. A spatially distributed Clark’s unit hydrograph based hybrid hydrologic model (Distributed-Clark), *Hydrological Sciences Journal*, DOI: 10.1080/02626667.2018.1516042

Professional Development Activities (last 3 years)

Intercultural Competence workshop. Purdue University. 2016.

Safe Zone training. Purdue University. 2016.

Diversity Awareness training. Purdue University. 2017.