

INDRAJEET CHAUBEY

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PROFESSIONAL BACKGROUND

Associate Professor: 2007 – present, Department of Agricultural and Biological Engineering and Department of Earth and Atmospheric Sciences, Purdue University, West Lafayette, IN.

Associate Professor: 2005 – 2006, Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville, AR.

Assistant Professor: 2000 – 2005, Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville, AR.

Adjunct Professor: 2002 – 2006, Environmental Dynamics Program, University of Arkansas.

ACADEMIC BACKGROUND

Ph.D., Biosystems Engineering, Oklahoma State University, Stillwater, 1997

Dissertation: Effect of spatial variability of rainfall on modeling hydrologic/water quality processes.

Advisor: Dr. C.T. Haan, Regents Professor and Sarkey's Distinguished Professor
G.P.A. 4.0/4.0

M.S., Biological & Agricultural Engineering, University of Arkansas, Fayetteville, 1994

Thesis: Effectiveness of vegetative filter strips in controlling losses of surface-applied poultry litter and swine manure constituents.

Advisor: Dr. Dwayne R. Edwards
G.P.A. 4.0/4.0

B.S., Agricultural Engineering, University of Allahabad, India, 1991

First Class, second rank in a class of 44 students.

RESEARCH INTERESTS

Availability of clean water is one of the grand challenges of modern times. My research integrates field data collection with simulation-based engineering and computational thinking to advance our understanding of fate and transport of water and related constituents across a wide range of spatial and temporal scales. Specifically, I am interested in ecohydrologic processes affecting fate and transport of sediment, nutrients, and pesticides from various land use activities and developing watershed management strategies to improve water quality.

PUBLICATIONS

Summary of Publications

a. Refereed (Journal Articles/Book Chapters):	51
b. Technical Papers/Conference Proceedings:	86
c. Papers Presented in Various Conferences:	17
d. Invited Seminars:	25
e. Research Reports:	12
f. Other:	20

Refereed (published or in print) (Respectively, ¹Graduate student; ²Post doctoral Research Associate; ³undergraduate student supervised by Dr. Chaubey):

1. Garg¹, V. and **I. Chaubey**. 2008. A computationally efficient inverse modeling approach of inherent optical properties for a remote sensing model. *International Journal of Remote Sensing*. In Press.
2. Mutlu¹, E., **I. Chaubey**, H. Hexmoor, and S.G. Bajwa. 2008. Comparison of artificial neural network models for hydrologic predictions at multiple gauging stations in an agricultural watershed. *Hydrological Processes* 10/1002/HYP7136.
3. Quansah, J.E., B.E. Engel, and **I. Chaubey**. 2008. Tillage practices usage in early warning prediction of atrazine pollution. *Transactions of the ASABE* 51(4):1311-1321.
4. Singh¹, N., S.G. Bajwa, and **I. Chaubey**. 2008. Removal of surface reflectance from above-water visible-near infrared spectroscopic measurements. *Applied Spectroscopy* 62(9)1013-1021.
5. Pennington, J.H. , M.S. Steele, K.A. Teague, B. Kurz, E. Gbur, J.H. Popp, H. German Rodriguez, **I. Chaubey**, M. Gitau, and M.A. Nelson. 2008. Breaking ground: a cooperative approach to data collection from an initially uncooperative population. *Journal of Soil and Water Conservation* 63(2):xxx-xxx (In print).
6. Leh¹, M.D., **I. Chaubey**, J. Murdoch, J.V. Brahana, and B.E. Haggard. 2008. Delineating runoff processes and critical runoff areas in a pasture watershed of the Ozark Highlands. *Hydrological Processes* 22(21): 4190-4204. DOI:10.1002/hyp.7021.
7. Migliaccio, K.W., and **I. Chaubey**. 2008. Influence of spatial distributions and stochastic parameters on SWAT model flow and sediment predictions. *Journal of Hydrologic Engineering* 13(4):258-269. DOI: 10.1061/(ASCE)1084-0699(2008)13:4(258).
8. Migliaccio¹, K.W., B.E. Haggard, **I. Chaubey**, and M. Matlock. 2007. Linking watershed characteristics to water quality parameters in War Eagle Creek watershed. *Transactions of the ASABE* 50(6):2007-2016.
9. Rodríguez, H.G., J.H. Popp, L.A. Rivera, **I. Chaubey**, and B. Schaffer. 2007. Implementation of Best Management Practices under cost risk to control phosphorus pollution in a crop based watershed in Arkansas. *Journal of Environmental Monitoring and Restoration* 3:195-207.
10. Srivastav, R.K., K.P. Sudheer, and **I. Chaubey**. 2007. A simplified approach to quantify predictive and parametric uncertainty in artificial neural network hydrologic models. *Water*

11. Migliaccio, K.W. and **I. Chaubey**. 2007. Multi-site and multi-variable calibration and validation of watershed models – Comment. *Hydrological Processes 21:3226-3228*. DOI:10.1002.hyp.6491.
12. **Chaubey, I.** and M. Matlock. 2007. Teaching undergraduate students to manage aquatic ecosystems at the watershed level: an ecological engineering approach. *International Journal of Engineering Education 23(4):723-727*.
13. Sudheer, K.P., **I. Chaubey**, V. Garg, and K.W. Migliaccio. 2007. Impact of time scale of calibration objective function on the performance of watershed models. *Hydrological Processes 21:3409-3419*. DOI:10.1002/hyp.6555.
14. **Chaubey, I.** D. Sahoo, B.E. Haggard, M.D. Matlock, and T.A. Costello. 2007. Nutrient retention, limitation, and sediment interactions in a pasture dominated stream. *Transactions of the ASAE 50(1):35-44*.
15. Sen¹, S., B.E. Haggard, **I. Chaubey**, K.R. Brye, T.A. Costello, and M.D. Matlock. 2007. Sediment phosphorus release at Beaver Reservoir, northwest Arkansas, 2002-3. *Air, Soil, and Water Pollution 179:67-77*.
16. Migliaccio¹, K.W., **I. Chaubey**, and B.E. Haggard. 2007. Evaluation of landscape and instream modeling to predict watershed nutrient yields. *Environmental Modeling and Software 22(7): 987-999*.
17. Sudheer, K.P., **I. Chaubey**, and V. Garg. 2006. Lake water quality assessment from Landsat TM data using neural network: An approach to optimal band combination selection. *Journal of the American Water Resources Association 42(6):1683-1695*.
18. Yuan, Y., R.L. Bingner, and **I. Chaubey**. 2006. Phosphorus modeling in the Annualized Agricultural Nonpoint Source Pollution (AnnAGNPS) Model. *In Modeling Phosphorus in the Environment, D.E. Radcliffe, and M.L. Cabrera (ed.)*. CRC Press, Boca Raton, FL. Pp. 215-240.
19. **Chaubey, I.**, K.L. White, C.H. Green, J.G. Arnold, and R. Srinivasan. 2006. Phosphorus Modeling in Soil and Water Assessment Tool Model. *In Modeling Phosphorus in the Environment, D.E. Radcliffe, and M.L. Cabrera (ed.)*. CRC Press, Boca Raton, FL. Pp. 163-188
20. **Chaubey, I.** and G.M. Ward. 2006. Hydrologic budget analysis of a small natural wetland in southeastern USA. *Journal of Environmental Informatics 8(1):10-21*.
21. Shirmohammadi, A., **I. Chaubey**, R.D. Harmel, D.D. Bosch, R. Munoz-Carpena, C. Dharmasri, A. Sexton, M. Arabi, M.L. Wolfe, J. Frankenberger, C. Graff, and T.M. Sohrabi. 2006. Uncertainty in TMDL models. *Transactions of the ASABE 49(4):1033-1049*.
22. Ekka, S.A., B.E. Haggard, M.D. Matlock, and **I. Chaubey**. 2006. Dissolved phosphorus concentrations and sediment interactions in effluent dominated Ozark streams. *Ecological Engineering 26:375-391*.

23. DeLaune², P.B., B.E. Haggard, T.C. Daniel, **I. Chaubey**, and M.J. Cochran. 2006. The Eucha/Spavinaw Phosphorus Index: A court mandated index for litter management. *Journal of Soil and Water Conservation* 61(2):96-105.
24. Merriman³, K., M. Gitau, and **I. Chaubey**. 2006. A tool for estimating best management practices effectiveness in Arkansas. *Discovery* 7:57-65.
25. **Chaubey, I.** and K.P. Sudheer. 2005. A framework to stochastically evaluate watershed models. *Proc. 2nd Indian International Conference on Artificial Intelligence Applications. B. Prasad (ed.). pp 1095-1109. Invited and Peer Reviewed.*
26. Sudheer, K.P., **I. Chaubey**, and V. Garg. 2005. Selection of optimal band combination for neural network based water quality retrieval from Landsat TM data. *Proc. 2nd Indian International Conference on Artificial Intelligence Applications. B. Prasad (ed.). pp 938-951. Peer Reviewed.*
27. White¹, K.L., and **I. Chaubey**. 2005. Multi-site and multi-variable calibration of the SWAT model. *J. American Water Resources Association* 41(5):1077-1089.
28. Warner, K.A., J.C. Bonzongo, E.E. Roden, M.G. Ward, A. Green, **I. Chaubey**, W.B. Lyons, and D. A. Arrington. 2005. Effect of watershed parameters on mercury distribution in different environmental compartments in the Mobile Alabama River Basin, USA. *Science for the Total Environment* 347:187-207.
29. **Chaubey, I.**, Cotter, A.S., T.A. Costello, and T. Soerens. 2005. Effect of DEM data resolution on SWAT output uncertainty. *Hydrological Processes* 19:621-628.
30. Matlock, M, B.E. Haggard, and **I. Chaubey**. 2004. (*Invited and peer reviewed book chapter*). Managing aquatic systems at watershed scale. D. Heldman (Editor). *Encyclopedia of Agricultural, Food, and Biological Engineering*.
31. Panda², S., V. Garg¹, and **I. Chaubey**. 2004. Artificial neural networks application in lake water quality estimation using satellite imagery. *Journal of Environmental Informatics* 4(2):65-74.
32. Haggard, B.E., S.A. Ekka, M.D. Matlock, and **I. Chaubey**. 2004. Phosphate equilibrium between stream sediments and water: potential effects of chemical amendments. *Transactions of the ASAE* 47(4):1113-1118.
33. White¹, K.L., B.E. Haggard, and **I. Chaubey**. 2003. Water quality during base flow and surface runoff conditions at the Buffalo National river near St. Joe, Arkansas. *Transactions of the ASAE* 42(2) 407-417.
34. Haggard, B.E., P.A. Moore, Jr., **I. Chaubey**, and E.H. Stanley. 2003. Nitrogen and phosphorus concentrations and export from Ozark Plateau watersheds: possible effect of land use on reservoir nutrient loading. *Journal of Biosystems Engineering* 86(1): 75 - 85.
35. Garg¹, V., **I. Chaubey**, and B.E. Haggard. 2003. Quantification of model output uncertainty due to calibrating watershed characteristics. *Transactions of the ASAE* 46(5):1347-1353.
36. Cotter¹, A.S., **I. Chaubey**, T.A. Costello, T.S. Soerens, and M.A. Nelson. 2003. Water quality

model output uncertainty as affected by spatial resolution of input data. *Journal of American Water Resources Association* 39(4): 977-986.

37. **Chaubey, I.**, D. Sahoo, B.E. Haggard, K.L. White, and M. Matlock. 2003. Assessment of nutrient retention in an agriculturally dominated stream. *Proc. AWRC Annual Conference*.
38. Dillahunt³, W.H., **I. Chaubey**, and M.D. Matlock. 2003. Watershed scale agricultural land use impact on instream physicochemical parameters. *Discovery* 4:21-25.
39. **Chaubey, I.**, A.S. Cotter¹, T.A. Costello, M.A. Nelson, and T.S. Soerens. 2002. Quantification of runoff and nutrient load prediction uncertainty due to GIS data resolution. *Proc. AWRC Conference on "Adequate Quality Water Supplies to Meet Our Growing Needs: Scientific, Regulatory, and Public Perspectives"*.
40. White¹, K.L., **I. Chaubey**, and M.A. Nelson. 2002. Phosphorus SWAT modeling in the Arkansas Portion of the Illinois River drainage Area. *Proc. AWRC Conference on "Adequate Quality Water Supplies to Meet Our Growing Needs: Scientific, Regulatory, and Public Perspectives"*.
41. Garg¹, V., **I. Chaubey**, and B.E. Haggard. 2002. Quantification of model output uncertainty due to watershed size. *Proc. AWRC Conference on "Adequate Quality Water Supplies to Meet Our Growing Needs: Scientific, Regulatory, and Public Perspectives"*.
42. Matlock, M.M., **I. Chaubey**, B.E. Haggard, and K.L. White. 2002. Is the fairness principle fair? *Impact* 4(6): 17-21.
43. Dennis³, S., **I. Chaubey**, and B.E. Haggard. 2002. Quantification of land use impact on stream water quality. *Discovery* 3: 35-39.
44. **Chaubey, I.**, P. Srivastava, L. Han, S.N. Addy and X. Yin. 2000. Using GIS, remote sensing and water quality modeling to estimate animal waste pollution potential. P.K. Bollich (ed.). *In Proc. Agricultural Water Quality and Quantity: Issues for the 21st Century*. 136-143
45. Benke, A.C., **I. Chaubey**, G.M. Ward and E.L. Dunn. 2000. Flood pulse dynamics of a river floodplain swamp in the southeastern USA coastal plain. *Ecology* 81(10):2730-2741.
46. Ward, G.M. and **I. Chaubey**. 2000. Diurnal variability of stage in a wetland pond in the Southeastern United States. *Verh. Internat. Verein. Limnol.* 27:1703-1706.
47. **Chaubey, I.**, C.T. Haan, J.M. Salisbury and S. Grunwald. 1999. Quantifying model output uncertainty due to spatial variability of rainfall. *Journal of American Water Resources Association* 38(5):1113-1123.
48. **Chaubey, I.**, C.T. Haan, S. Grunwald and J.M. Salisbury. 1999. Uncertainty in the model parameters due to spatial variability of rainfall. *Journal of Hydrology* 220(1-2):48-61.
49. **Chaubey, I.**, D.R. Edwards, T.C. Daniel, P.A. Moore, Jr. and D.J. Nichols. 1995. Effectiveness of vegetative filter strips in controlling losses of surface-applied poultry litter constituents. *Transactions of the ASAE* 38(6):1687-1692.

50. **Chaubey, I.**, D.R. Edwards, T.C. Daniel and P.A. Moore, Jr. 1995. Buffer strips to improve quality of runoff from land areas treated with animal manures. Kenneth Steele (ed.). *In Proc. Animal Waste and Land Water Interface*: 363-370.
51. **Chaubey, I.**, D.R. Edwards, T.C. Daniel, P.A. Moore, Jr. and D.J. Nichols. 1994. Effectiveness of vegetative filter strips in retaining surface-applied swine manure constituents. *Transactions of the ASAE* 37(3):845-850.

Refereed (in Review):

1. Sudheer, K.P., P.H. Gowda, **I. Chaubey**, and T.A. Howell. 2008. Artificial neural network approach for mapping contrasting tillage practices. *Journal of Agronomy. In Review (08/25/08)*.
2. Cibin, R., K.P. Sudheer, and **I. Chaubey**. 2008. A comprehensive analysis of SWAT model output sensitivity to its parameters and related research issues. *Hydrological Processes. In review (08/20/08)*.
3. Garg¹, V., **I. Chaubey**, and S. Singh. 2008. Physical model of remote sensing reflectance: Monte Carlo simulations and evaluations in water tank experiments. *Transactions of the ASABE. In Review (Revised 09/29/08)*.
4. Garg, V., **I. Chaubey**, C. Maringanti, and S.G. Bajwa. 2008. Modeling spectral reflectance of Beaver Reservoir using neural network simulator of a remote sensing model and genetic algorithm optimizer. *Transactions of the ASABE. In Review (06/09/08)*
5. Maringanti, C., **I. Chaubey**, M. Arabi, and B. Engel. 2008. A multi-objective optimization tool for the selection and placement of BMPs for pesticide control. *Hydrol. Earth System Science Discussion*, 5, 1821-1862. (07/11/08).
6. Thomas, M.A., B.E. Engel, and **I. Chaubey**. 2008. Water quality impacts of corn production to meet biofuel demands. *Journal of Environmental Engineering. In review (06/09/08)*.
7. Leh¹, M.D. and **I. Chaubey**. 2008. GIS-based predictive models of hillslope runoff generation processes. *Journal of the American Water Resources Association. In review (Revised 09/15/08)*.
8. Maringanti¹, C., **I. Chaubey**, and J. Popp. 2008. Development of a multi-objective optimization tool for selection and placement of BMPs for nonpoint source pollution control. *Water Resources Research. In review (04/15/08)*
9. Gitau², M.W., R. Srivastava, and **I. Chaubey**. 2007. Employing model autocalibration tools: experience with and recommendations for the SWAT model. *Computers and Electronics in Agriculture. In Review (10/29/07)*.
10. Gitau², M.W., **I. Chaubey**, E.Gbur, J.H. Pennington, and B. Gorham. 2007. Impact of land use change and BMP implementation on water quality in a pastured northwest Arkansas Watershed. *Journal of Environmental Management. In Review*
11. Merriman¹, K.R., M.W. Gitau², and **I. Chaubey**. 2007. A tool for estimating Best Management Practice Effectiveness in Arkansas. *Applied Engineering in Agriculture. In Review (06/09/08)*.

Technical Papers/Proceedings presented at national/international conferences (¹Graduate student; ²Post doctoral Research Associate; ³undergraduate student supervised by Dr. Chaubey):

1. Maringanti¹, C., **I. Chaubey**, and B. Engel. 2008. Development of a multi-objective optimization tool for the selection and placement of BMPs for pesticide control. Paper No. 083536, Annual Conference of the ASABE, Providence, RI.
2. Leh¹, M.D., S.G. Bajwa, **I. Chaubey**, and J. Cothren. 2008. A remote sensing methodology of delineating stream channel morphology. Paper No. 083734, Annual Conference of the ASABE, Providence, RI.
3. Chiang¹, L., M. Gitau², and **I. Chaubey**. 2008. Effectiveness of BMPs considering uncertainties in weather patterns in a pasture dominated watershed. Paper No. 083549, Annual Conference of the ASABE, Providence, RI.
4. Gitau², M., L. Chiang¹, **I. Chaubey**, and M. Sayeed. 2008. Computational approaches to evaluating BMPs considering stochasticity of weather. Paper No. 083577, Annual Conference of the ASABE, Providence, RI.
5. Cibir, R., K.P. Sudheer, and **I. Chaubey**. 2008. Global sensitivity analysis of distributed hydrologic models. Paper No. 084910, Annual Conference of the ASABE, Providence, RI.
6. Merriman¹, K.R., **I. Chaubey**, S. Ale, and L. Bowling. 2008. Quantification of nutrient dynamics in agricultural drainage ditches with BMPs Hoagland Ditch watershed in Indiana. Paper No. 083530, Annual Conference of the ASABE, Providence, RI.
7. Thomas, M., B. Engel, and **I. Chaubey**. 2008. Unintended consequences of biofuel production on water quality. Paper No. 084824, Annual Conference of the ASABE, Providence, RI.
8. **Chaubey, I.**, C. Maringanti, B.K. Schaffer, and J.H. Popp. 2008. Targeting vs. optimization: Critical evaluation of BMP implementation plan for watershed management. EWRI World Environmental and Water Resources Congress, Honolulu, HI. May 12-16, 2008.
9. **Chaubey, I.**, M. Gitau, L. Chiang, J.H. Popp, E. Gbur, M.A. Nelson, J. Pennington, G. Rodriguez, and B. Kurz. 2008. BMP effectiveness assessment for a pasture dominated watershed: results from two years of CEAP assessment. Annual *Conference of the USDA-CSREES. Sparks, NV.* February 4 – 7, 2008.
10. Gitau², M.W., L. Chiang, **I. Chaubey**, and M. Sayeed. 2008. Evaluating BMP scenario under CEAP: approaches to handling a multitude of runs and large datasets. *Annual Conference of the USDA-CSREES. Sparks, NV.* February 4 – 7, 2008.
11. **Chaubey, I.** and V. Garg. 2007. Estimation of inherent optical properties of lake water using inverse modeling. Paper No. 072100, ASABE, St. Joseph, MI.
12. Maringanti¹, C., **I. Chaubey**, J. Popp, and M. Gitau. 2007. Development of a multi-objective optimization tool for the selection and placement of BMPs for nonpoint source pollution control. Paper No. 072105, ASABE, St. Joseph, MI.

13. Gitau², M.W., R. Srivastava¹, and **I. Chaubey**. 2007. Watershed response modeling in Arkansas Priority Watersheds: experience with SWAT autocalibration. Paper No. 072171, ASABE, St. Joseph, MI.
14. Schaffer¹, B.K. and **I. Chaubey**. 2007. Development of a method to produce a targeted management plan using a physical process watershed model and economic optimization to meet TMDL requirements. Paper No. 072181, ASABE, St. Joseph, MI.
15. Migliaccio, K.L., **I. Chaubey**, and K.P. Sudheer. 2007. Conducting multi-site calibration for watershed models. Paper No. 072209, ASABE, St. Joseph, MI.
16. Gitau², M.W., **I. Chaubey**, R. Srivastava, and M.A. Nelson. 2007. Effectiveness of BMPs in reducing pollutant losses from a northwest Arkansas Agricultural watershed. Paper No. 072244, ASABE, St. Joseph, MI.
17. **Chaubey, I.**, B.K. Schaffer, E. Vories, P. Tacker, J.H. Popp, and G. Rodriguez. 2007. A decision support system framework for integrated agricultural watershed management. *Annual Conference of the USDA-CSREES. Savannah, GA. January 28-31, 2007.*
18. Gitau², M., **I. Chaubey**, and J.H. Popp. 2007. Effectiveness and optimization of BMPs in improving water quality from agriculturally dominated watersheds. *Annual Conference of the USDA-CSREES. Savannah, GA. January 28-31, 2007.*
19. **Chaubey, I.**, M.D. Leh, J.V. Brahana, and B.E. Haggard. 2006. Where does runoff come from? A monitoring and modeling approach. *Proc. An International Perspective on Environmental and Water Resources, eds. U.P. Singh, B. Datta, B. Panigrahi, and M. Sharma. New Delhi, India. December 18-20, 2006.*
20. Vories, E.D., P. Tacker, and **I. Chaubey**. 2006. On-farm studies of water use and water quality for rice production in the USA. *Proc. An International Perspective on Environmental and Water Resources, eds. U.P. Singh, B. Datta, B. Panigrahi, and M. Sharma. New Delhi, India. December 18-20, 2006.*
21. **Chaubey, I.** M. Gitau, D. Ennannay, M. Nelson, E. Gbur, J. Popp, and J. Pennington. 2006. Effectiveness and optimization of BMPs in improving water quality impacted by land application of animal manure. Abstract published in the proceedings of the Workshop "Managing Agricultural Landscapes for Environmental Quality: Strengthening the Science Base". Kansas City, MO. October 11-13, 2006. 71 p.
22. Popp, J., G. Rodriguez, J. Pennington, E. Gbur, M. Steele, **I. Chaubey**, and M. Gitau. From Conflict to Cooperation: Enlisting stakeholders to address water quality disputes in an embattled watershed. Abstract published in the proceedings of the Workshop "Managing Agricultural Landscapes for Environmental Quality: Strengthening the Science Base". Kansas City, MO. October 11-13, 2006. 68 p.
23. Merriman¹, K, M. Gitau, and **I. Chaubey**. 2006. A tool for estimating best management practice effectiveness in Arkansas. Abstract published in the proceedings of the Workshop "Managing Agricultural Landscapes for Environmental Quality: Strengthening the Science Base". Kansas City, MO. October 11-13, 2006. 97 p.
24. Gitau², M. and **I. Chaubey**. 2006. Regionalization of SWAT model parameters in Arkansas

Priority Watersheds. Abstract published in the proceedings of the Workshop “Managing Agricultural Landscapes for Environmental Quality: Strengthening the Science Base”. Kansas City, MO. October 11-13, 2006. 29 p.

25. **Chaubey, I.**, P. Tacker, E. Vories, and B.K. Schaffer. 2006. Development of a decision support system for integrated water quality management in Arkansas Delta. *World Congress of Computers and Electronics in Agriculture. Orlando, FL.*
26. Lakshmi, G., K.P. Sudheer, and **I. Chaubey**. 2006. Autocalibration of complex watershed models using simulation optimization framework. *ASABE Paper No. 06-2141. 2006 Annual International Conference of the ASABE. Portland, OR.*
27. **Chaubey, I.**, M. Leh, V. Brahana, and B.E. Haggard. 2006. Quantification of spatial distribution of runoff source areas in an agricultural watershed. *ASABE Paper No. 06-2126. 2006 Annual International Conference of the ASABE. Portland, OR.*
28. Shirmohammadi, A., **I. Chaubey**, R.D. Harmel, D.D. Bosch, R. Munoz-Carpena, C. Dharmasri, A. Sexton, M. Arabi, M.L. Wolfe, J. Frankenberger, C. Graff, and T.M. Sohrabi. 2006. Uncertainty in TMDL models. *ASABE Paper No. 06-XXXX. 2006 Annual International Conference of the ASABE. Portland, OR.*
29. **Chaubey, I.**, E. Gbur, B. Kurz, M. Nelson, J. Popp, M. Steele, and K. Teague. 2006. Effectiveness and optimization of BMPs in improving water quality from an agriculturally dominated watershed. *USDA-CSREES National Water Quality Conference. San Antonio, TX.*
30. **Chaubey, I.**, E. Vories, and P. Tacker. 2006. Integrated BMP assessment for improving water quality in a rice/soybean dominated watershed in the Arkansas Delta. *USDA-CSREES National Water Quality Conference. San Antonio, TX.*
31. Schaffer¹, B.K. and **I. Chaubey**. 2005. Development of a dynamic decision tool for an impaired watershed in the Arkansas Delta using Soil and Water Assessment Tool model. *Annual Conference of the American Water Resources Association, Seattle, WA.*
32. Srivastava¹, R. and **I. Chaubey**. 2005. Comparison of sediment prediction ability of the AnnAGNPS and the SWAT model for the West Fork of the White River. *Annual Conference of the American Water Resources Association, Seattle, WA.*
33. Leh¹, M.D., **I. Chaubey**, J. Murdock, and J.V. Brahana. 2005. Quantification of runoff-contributing areas in a pasture watershed – a field scale approach. *Annual Conference of the American Water Resources Association, Seattle, WA.*
34. **Chaubey, I.**, S. Panda, K.L. White, and M. Matlock. 2005. Decision Support System Development for Beaver Lake Watershed management – an environmental informatics approach. *ASAE paper No. 052199. 2005 Annual International Conference of ASAE, Tampa, Florida.*
35. Garg¹, V. and **I. Chaubey**. 2005. Optical modeling of hyperspectral remote sensing signals to assess water quality. *ASAE paper No. 052003. 2005 Annual International Conference of ASAE, Tampa, Florida.*
36. V. Vibhava, S.G. Bajwa, and **I. Chaubey**. 2005. Hydrologic modeling of L’Anguille watershed using Soil and Water Assessment Tool model. *ASAE paper No. 052157. 2005 Annual*

International Conference of ASAE, Tampa, Florida.

37. **Chaubey, I.**, and K.L. White. 2005. Influence of hydrologic response unit (HRU) distribution on SWAT model flow and sediment predictions. Proc. Watershed Management to Meet Water Quality Standards and Emerging TMDL. ASAE, St. Joseph, MI. pp. 283-289.
38. Brahana, J.V., T.E. Ting, M. Al-Qinna, J.F. Murdoch, R.K. Davis, J.L. Killingbeck, E. Szilbagyi, M. Doneny-Skubic, **I. Chaubey**, P.D. Hays, and G. Thoma. 2005. Quantification of hydrologic budget parameters for the vadose zone and epikarst in mantled karst. USGS Karst Interest Group Proceedings, Rapid City, SD. Pp. 144-152.
39. **Chaubey, I.**, M. Leh, K.L. White, J.F. Murdock, and V. Brahana. 2005. Development of a field scale methodology to identify runoff source areas in a pasture dominated watershed. *USDA-CSREES National Water Quality Conference. San Diego, CA.*
40. Vories, E., **I. Chaubey**, P. Tacker, and B.K. Schaffer. 2005. Development of an integrated water quality-water management program in the Arkansas Delta. *USDA-CSREES National Water Quality Conference. San Diego, CA.*
41. **Chaubey, I.**, D. Sahoo, B.E. Haggard, M. Matlock, T.A. Costello, and K.L. White. 2005. Integrated assessment of BMPs, nutrient transport, and water quality in an agriculturally dominated stream. *First International Conference on Environmental Science and Technology. American Academy of Sciences. New Orleans, LA.*
42. White¹, K.L., **I. Chaubey**, and B.E. Haggard. 2005. Coupling of CE QUAL-W2 and SWAT to simulate watershed reservoir management. *First International Conference on Environmental Science and Technology. American Academy of Sciences. New Orleans, LA.*
43. **Chaubey, I.** and K.L. White. 2004. Stochastic validation of SWAT model. *Presented at the AWRA Annual International Conference, Orlando, FL.*
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73. Cotter¹, A.S., **I. Chaubey**, T.A. Costello, M.A. Nelson, and T. Soerens. 2002. TMDL data requirements for agricultural watersheds. *Proc. Total Maximum Daily Load (TMDL):*

Environmental Regulations Conference. ASAE, St. Joseph, MI. 408-415 pp.

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84. **Chaubey, I.**, D.R. Edwards, T.C. Daniel, and P.A. Moore, Jr. 1994. Modeling nutrient transport in vegetative filter strips. *ASAE Paper No. 942149. 1994 Annual International Conference of ASAE, Kansas City, MO.* 28 pp.
85. Edwards D.R., **I. Chaubey**, T.C. Daniel, and P.A. Moore, Jr. 1994. Effectiveness of vegetative filter strips in reducing losses of land-applied animal manure constituents. *In Proc. XII World Conference on Agricultural Engineering, Milano, Italy, Aug. 29-Sept.1.* 409-415 pp.

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Paper Presented at Regional, State, or Local Conference (¹Graduate student; ²Post doctoral Research Associate; ³undergraduate student supervised by Dr. Chaubey):

1. Thomas, M., B. Engel, and **I. Chaubey**. 2007. Unintended consequences of biofuel production on water quality. Poster presented at the Annual Conference of the Center for the Environment (C4E), Purdue University, IN. November 9, 2007.
2. Migliaccio, K.W., B.E. Haggard, **I. Chaubey**, and M.D. Matlock. 2006. Seasonality, land use, and scale influences on stream water quality. *Paper presented at the Florida section of ASABE conference.* Jupiter, FL. June 1-3, 2006.
3. Merriman¹, K, M. Gitau, and **I. Chaubey**. 2006. A tool for estimating best management practice effects in Arkansas. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 18, 2006.
4. Leh¹, M., **I. Chaubey**, J.B. Brahana, J. Murdock, and B.E. Haggard. 2006. Field investigations of rainfall-runoff processes in a Karst watershed. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 18, 2006.
5. Mutlu¹, E., **I. Chaubey**, H. Hexmoore, and S. Bajwa. 2006. Comparison of artificial neural network models for hydrologic prediction in agricultural watersheds. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 18, 2006.
6. Leh¹, M. **I. Chaubey**, J.V. Brahana, and J. Murdoch. Quantification of critical runoff contributing areas in a pasture watershed. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 19, 2005.
7. Garg¹, V. and I. Chaubey. Diffuse light effect on the accuracy of remote sensing model of water quality assessment. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 19, 2005.
8. Schaffer¹, B.K., **I. Chaubey**, and P. Tacker. Development of an integrated water quality – water management program in Arkansas Delta. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 19, 2005.
9. Mutlu¹, E.O., **I. Chaubey**, and H. Hexmoor. Development of a neural net model to predict total phosphorus concentration in Eucha watershed. *Poster presented at the Annual Conference of the Arkansas Water Resources Association.* Fayetteville, AR. April 19, 2005.
10. Cochran, M., T. Daniel, and **I. Chaubey**. Update on Eucha-Spavinaw Phosphorus Index Development. Seminar presented at the Quad State Poultry Dialogue Symposium. Fayetteville, AR. May 6, 2004.
11. **Chaubey, I.**, and V. Garg. Water quality modeling using hyperspectral remote sensing. *Twelfth*

Annual Arkansas Space Grant Symposium. Lyon College, Batesville, AR. April 30, 2004.

12. White¹, K.L., B.E. Haggard, and **I. Chaubey**. Water quality during base flow and surface runoff conditions at the Buffalo National River near St. Joe, Arkansas from 1991 – 2001. *Poster presented at the 2003 Arkansas Water Resources Conference Center Conference on “Quality Water Resources to Meet Our Competing Needs”.* Fayetteville, AR. April 22 – 23.
13. Sahoo¹, D., **I. Chaubey**, B.E. Haggard, and M. Matlock. Nutrient retention and limitation in an agriculturally dominated stream in Northwest Arkansas. *Poster presented in the 2003 Arkansas Water Resources Conference Center Conference on “Quality Water Resources to Meet Our Competing Needs”.* Fayetteville, AR. April 22 – 23.
14. Ekka, S.A., B.E. Haggard, M.D. Matlock, and **I. Chaubey**. Impact of wastewater treatment plants on sediment phosphorus concentration. *Poster presented in the 2003 Arkansas Water Resources Conference Center Conference on “Quality Water Resources to Meet Our Competing Needs”.* Fayetteville, AR. April 22 – 23.
15. Griffis, C.L., and **I. Chaubey**. Teaching online: an innovative pedagogical tool. *Southern Region Teaching Symposium. Fayetteville, AR. Oct 6 – 8, 2002.*
16. Garg¹, V., and **I. Chaubey**. Effect of Calibrating Watershed Characteristics on Uncertainty of Runoff Volume Modeling. *2002 AWRC Conference on “Adequate Quality Water Supplies to Meet Our Growing Needs: Scientific, Regulatory, and Public Perspectives”.* Fayetteville, AR.
17. Han, L., **I. Chaubey**, and S. Addy. Modeling nonpoint source pollution from poultry litter using GIS. *First Alabama GIS Symposium, Tuscaloosa. June 22-23, 1999.*

Invited Seminars:

National/International Conferences:

1. “Can agricultural production and ecosystem integrity coexist: results from agricultural watersheds in USA”. **I. Chaubey**. 10th Inter-Regional Conference on Water Resources. New, Delhi, India. October 17- 20, 2007.
2. “A framework to stochastically evaluate watershed models”. **I. Chaubey**. 2nd Indian International Conference on Artificial Intelligence Applications. Pune, India. December 20-22, 2005.
3. “Integrated ecosystem management: research advances, opportunities, and challenges in 21st Century”. **I. Chaubey**. Indian Agricultural Research Institute, New Delhi. December 13, 2005.
4. “Identifying runoff source areas in a pasture dominated watershed”. 2005. **I. Chaubey**. Annual International Conference of the Soil and Water Conservation Society. Rochester, NY. August 2, 2005.
5. “Eucha/Spavinaw Phosphorus Index”. 2004. Daniel, T.C. and I. Chaubey. SERA-17 Annual International Conference. New Bern, NC. June 20-22
6. “Integrating physical, chemical, and biological response monitoring for watershed management: stream reach to watershed scale processes and lessons”. **Chaubey, I., M.D. Matlock, and B.E. Haggard**. 2003 ASA-CSSA-SSSA Annual International Meeting. Denver, Colorado, November 2

7. “Engaging stakeholders in watershed management process using a decision support system”. M.D. Matlock, **I. Chaubey**, B.E. Haggard, and T.A. Costello. *2003 ASA-CSSA-SSSA Annual International Meeting. Denver, Colorado, November 2 – 6.*
8. “How SWAT models phosphorus transport”. **Chaubey, I.** *2002 SERA-IEG17 Annual Meeting. Fort Collins, CO. June 26, 27, 2002.*

Regional:

9. Chaubey, I. 2007. Nutrient limitation, nutrient retention, and sediment nutrient interactions in an agriculturally dominated watershed. *Hydraulics Group Seminar Series, Purdue University. March 5, 2007.*
10. Chaubey, I. 2007. Optical modeling of remote sensing reflectance for water quality assessment. *Civil Engineering Department. September 19, 2007.*
11. Chaubey, I. 2007. Computing needs in watershed hydrology and modeling. *CRI Luncheon Discussion, Purdue University. December 7, 2007.*
12. “Mathematical modeling of watershed processes”. **Chaubey, I.** Public Policy Symposium. Little Rock, AR. November 17, 2006.
13. “Modeling approaches to evaluate watershed and water quality processes”. **Chaubey, I.** Upper White River Water Quality Conference. Branson, MO. April 6, 2006.
14. “Water quantity/quality issues in the L’Anguille River watershed. **Chaubey, I.** Arkansas Soil and Water Education Conference. Arkansas State University, Jonesboro. January 12, 2006.
15. “Development of a Decision Support System for Beaver Lake watershed”. **Chaubey, I.** Northwest Arkansas Water Quality Symposium, Rogers, AR. March 22, 2005.
16. “Water resources, sustainable agriculture, and economic development in Arkansas: an Ecological Engineering solution”. **Chaubey, I.** *Rural Friendship Development Day conference. Fayetteville, AR. August 12, 2004.*
17. “Beaver Lake watershed decision support system (BLWDSS)”. **Chaubey I., S. Panda, K.L. White, M. Matlock, B. Haggard, and T.A. Costello.** *2004 Arkansas Water Resources Center Conference. Fayetteville, April 20-21, 2004.*
18. “Uncertainty analyses in hydrologic/water quality models”. **Chaubey, I.** *Environmental Dynamics Colloquium, University of Arkansas, Fayetteville. January 26, 2004.*
19. “Assessment of Nutrient Dynamics in an Agriculturally Dominated Stream”. **Chaubey, I., D. Sahoo, B.E. Haggard, K.L. White, and M. Matlock.** *2003 Arkansas Water Resources Conference Center Conference on Quality Water Resources to Meet Our Competing Needs. Fayetteville, AR. April 22 – 23.*
20. “Demonstration of SWAT Model Using Beaver Lake Watershed”. White, K.L., and **I. Chaubey.** *2003 Arkansas Water Resources Center Conference on Quality Water Resources to Meet Our*

Competing Needs. Fayetteville, AR. April 22 – 23.

21. “Release of Phosphorus from Stream and Reservoir Sediment: Effect of Chemical Amendments”. Haggard, B.E., S.A. Ekka, M. Matlock, P.A. Moore, jr., and **I. Chaubey**. *2003 Arkansas Water Resources Conference Center Conference on Quality Water Resources to Meet Our Competing Needs. Fayetteville, AR. April 22 – 23.*
22. “Total maximum daily loads”. Phosphorus Management Workshop. *Division of Agriculture, University of Arkansas. October 15, 2002.*
23. “Quantification of runoff and nutrient load prediction uncertainty due to GIS data resolution”. *2002 Annual Arkansas Water Resources Center Conference. April 23-24, 2002.*
24. “SWAT Modeling of the Illinois River Drainage Area in Arkansas”. K.L. White*, **I. Chaubey**, and M.A. Nelson. *2002 Annual Arkansas Water Resources Center Conference. April 23-24, 2002.*
25. “Stream Nutrient Retention in the Illinois River, Northwest Arkansas: Ecological Services and Water-Quality Criteria”. B.E. Haggard, M. Matlock, and **I. Chaubey**. *2002 Annual Arkansas Water Resources Center Conference. April 23-24, 2002.*
26. “Nonpoint Source Pollution and Water Quality: Issues and Opportunities”. *Allahabad Agricultural Institute (Deemed University), India. May 22, 2001.*
27. “Radar measurement of rainfall: application in hydrology/water quality modeling”. *Center for Freshwater Studies, University of Alabama, Tuscaloosa, November 13, 1997.*
28. “Analysis of input errors in water quality modeling”. *Cahaba/Warrior Student Chapter of AWRA, Tuscaloosa, February 26, 1998.*

Other Presentations/publications (¹Graduate student; ²Post doctoral Research Associate; ³undergraduate student supervised by Dr. Chaubey):

1. Gitau², M., L. Chiang, **I. Chaubey**, and S. Mohammed. Evaluating best management practice impacts on water quality considering stochasticity of weather. Poster Presented at the CRI, High Performance Computing Seminar, Purdue University. October 25, 2007.
2. **Chaubey, I.** 2006. Development of an integrated water quality – water management program in the L’Anguille River watershed. Faculty Impact Statements 2005. Arkansas Agricultural Experiment Station Research Series 539. pp. 55.
3. **Chaubey, I.** 2006. Identifying runoff contributing areas for water quality management. . Faculty Impact Statements 2005. Arkansas Agricultural Experiment Station Research Series 539. pp. 55.
4. **Chaubey, I.** Beaver Lake watershed decision support system. *The Great Plains Network Consortium Meeting, Lawrence, KS. February 25, 2005.*
5. **Chaubey, I.**, K.L. White, and C. Cooper. Using SWAT models in watershed response assessment. *Workshop conducted at the Arkansas Soil and Water Conservation Commission. July 15, and August 26, 2004.*

6. Schaffer¹, B., **I. Chaubey**, M. Matlock, J. Popp, P. Tacker, and E. Vories. Integrated water quality – water conservation program in the Arkansas Delta. Poster presented at the L'Anguille River Watershed Awareness Day. Forest City, AR. July 29, 2004.
7. Ludwig, A., Marty Matlock, B. Haggard, R. Morgan, **I. Chaubey**, and Monty Matlock. 2004. The influence of riparian forest canopy on stream primary productivity. *AWRA Summer Specialty Conference on "Riparian Ecosystems and Buffers: Multi-scale Structure, Function, and Management"*. Olympic Valley, CA. June 28-30.
8. **Chaubey, I.** 2004. Decision Support System research activities within the Ecological Engineering program. *Presented at the Public Policy Colloquium, University of Arkansas, Fayetteville.* January 21.
9. Garg¹, V., and **I. Chaubey**. 2003. Effect of suspended sediment distribution on spectral reflectance. Abstract published in the *Proc. Total Maximum Daily Load: Environmental Regulations II*. ASAE, St. Joseph, MI. 136 p.
10. **Chaubey, I.**, M.D. Matlock, and B.E. Haggard. 2003. Managing aquatic ecosystem processes at the watershed level: an ecological engineering approach. *Resource (May 2003)*. 15 p.
11. Ekka, S., B.E. Haggard, M. Matlock, and **I. Chaubey**. 2003. Phosphorus sources in the Illinois River Basin: effect of chemical amendments on sediment phosphorus interactions. *Poster Presented at the Annual Conference of the North American Benthological Society. Athens, GA.* May 27 – 31.
12. **Chaubey, I.**, and T.A. Costello. 2002. Spatial data requirements for TMDL development use water quality models. *Faculty Impact Statements. University of Arkansas Agricultural Experiment Station.* 46 p.
13. **Chaubey, I.** 2002. New graduate class prepares students to tackle environmental problems. *Faculty Impact Statements. University of Arkansas Agricultural Experiment Station.* 61 p.
14. White¹, K.L., and **I. Chaubey**. Moores Creek and Lincoln Lake Watershed Project. *The Tri-County Conservation District Newsletter, March/April 2003.*
15. Garg¹, V., and **I. Chaubey**. Secchi Disk depth measurement using optical sensors. *Poster Presented in the Phosphorus Management Workshop. Division of Agriculture, University of Arkansas.* October 15, 2002.
16. **Chaubey, I.** M. Matlock, T.A. Costello, B. Haggard, and K.L. White. Development of a decision support system and data needs for the Beaver Lake watershed. *Poster Presented in the Phosphorus Management Workshop. Division of Agriculture, University of Arkansas.* October 15, 2002.
17. **Chaubey, I.**, T.A. Costello, K.L. White, and D. Sahoo. Optimizing BMPs, water quality and sustained agriculture in the Lincoln Lake watershed. *Poster Presented in the Phosphorus Management Workshop. Division of Agriculture, University of Arkansas.* October 15, 2002.
18. Maxwell, C.V., K. VanDevender, **I. Chaubey**, P.A. Moore, M.E. Davis, K.L. White, and S. Sen. Swine waste demonstration and training project. *Poster Presented at the Phosphorus*

Management Workshop. Division of Agriculture, University of Arkansas. October 15, 2002.

19. **Chaubey, I.** A simplified methodology to identify “hot spots” for nonpoint source pollution. Faculty Impact Statements 2000. University of Arkansas Agricultural Experiment Station. 45 p.
20. **Chaubey, I.,** and C. Griffis. Web-based class teaches students micro-computer applications in agriculture and human environmental sciences. *Faculty Impact Statements 2000. University of Arkansas Agricultural Experiment Station. 54 p.*

Reports Written on Research Results:

1. **Chaubey, I.** J.H. Popp, P. Tacker, and E. Vories. 2007. Development of an integrated water quality-water management program in the Arkansas Delta. Final report submitted to the USDA-CSREES.
2. **Chaubey, I.,** M. Matlock, B. Haggard, P. Tacker, and E. Vories. 2007. Sustainable agriculture and water resources in Arkansas: A bioenvironmental engineering solution. Final report submitted to the EPA Region 6.
3. **Chaubey, I.,** B.E. Haggard and P. Srivastava. 2007. Differentiating runoff contributing areas for effective water quality management. Abstract published in the proceedings of the 2007 Water and Watersheds PD Meeting. National Water Conference, Savannah, GA. January 29, 2007.
4. **Chaubey, I.,** M. Matlock, and V. Garg. 2005. SWAT modeling in the Arkansas Portion of the Illinois River Watershed. *Final Report Submitted to Arkansas Soil and Water Conservation Commission. Project No. 02-1400.*
5. **Chaubey, I.,** M. Matlock, T.A. Costello, B.E. Haggard, V. Garg, S. Sen, K.L. White, and R.K. Davis. 2005. Development of a Decision Support System and Data Needs for the Beaver Lake watershed. *Final Report Submitted to Arkansas Soil and Water Conservation Commission. Project No. 02-1200.*
6. **Chaubey, I.,** T.A. Costello, K.L. White, M.A. Nelson, and M. Steele. 2005. Optimizing BMPs, water quality, and sustained agriculture in the Lincoln Lake watershed. *Final Report Submitted to Arkansas Soil and Water Conservation Commission. Project No. 01-1100.*
7. **Chaubey, I.,** M. Matlock, T. Costello, C. Cooper, and K. White. 2004. GIS database development and watershed modeling in Arkansas priority watersheds. *Final Report Submitted to Arkansas Soil and Water Conservation Commission. Project No. 04-120.*
8. Maxwell, C.V., K. W. VanDevender, K.P. Coffey, P.A. Moore, **I. Chaubey,** and D.R. Smith. 2003. Swine Waste Demonstration Project. *Final Report Submitted to Arkansas Soil and Water Conservation Commission. Contract No. 0017837.*
9. **Chaubey I.,** L. Han, and S.N. Addy. 2000. Environmental and economic impact assessment of animal waste pollution potential using Geographic Information System. *School of Mining and Energy Development, University of Alabama, Tuscaloosa, AL.*
10. **Chaubey, I.,** D.R. Edwards, and T.C. Daniel. 1994. Assessment of effectiveness of buffer zones in removing impurities in runoff from areas treated with poultry litter. *Publication No. 166.*

11. Quarterly progress reports and annual reports submitted to EPA on various funded projects.
12. Annual Progress reports (1999, 2000, 2001) submitted to NSF for project titled “Social impact assessment of human exposure to mercury related to land use and physicochemical settings in the Alabama-Mobile River Basin”.

FUNDED RESEARCH PROJECTS

Summary of External Funding

2. Principal Investigator

a. Federal:	\$2,488,316
b. Non-federal/Other:	\$367,010

3. Co-Principal Investigator

a. Federal:	\$3,036,973
b. Non-federal	\$224,363

Song, X.C., J. Carlson, R. S. Govindaraju, C. Hoffman, D. Niyogi, **I. Chaubey**, and L. Zhao. INTEROP: Developing community-based drought information network protocols and tools for multidisciplinary regional scale applications (DRInet). NSF 750,000. 2008-2011.

Engel, B. and **I. Chaubey**. Web-based load-duration curve for TMDL. USGS. \$95,160. 2008-2009.

Engel, B., **I. Chaubey**, R. Farnsworth, and J.G. Hunter. Web-based low impact development decision support and planning tool. USGS. \$76,472. 2008-2010.

Engel, B., D. Dodenhammer, N. Devadasan, and **I. Chaubey**. Development of water quality decision support tools using service oriented architecture (SOA) and web 2.0 development approach. Intercampus Applied Research Program. \$50,000. 2008-2009.

Engel, B., M. Arabi, J. Frankenberger, **I. Chaubey**, and J. Lee. Multiobjective watershed management support system for spatial allocation of agricultural management practices. USDA-CSREES. \$550,000. 2007-2010.

Chaubey, I. and L. Bowling. Quantification of sediment nutrient interactions as affected by drainage ditch management. Indiana Water Resources Research Center. \$18,500. 2007-2008.

Chaubey, I. and V. Merwade. Ecohydrology: A new class and cyber-field trip module for DEEE students. Division of Environmental and Ecological Engineering, Purdue University. \$6,000. 2007.

Chaubey, I., M. Gitau, and P. Tacker. Identification of NPS pollution sources and BMP evaluation in 11-digit HUCs in the L’Anguille River watershed. Arkansas Natural Resources Commission. \$81,034. 2006-2008.

- Chaubey, I.,** J.H. Popp, and B. Kurz. Effectiveness and optimization of BMPs in improving water quality from an agricultural watershed. USDA CSREES (CEAP). 2005 – 2008. \$650,000.
- Chaubey, I.,** S.G. Bajwa, and M.D. Matlock. Environmental resource management to develop watershed technologies and management tools. EPA, Region 6. 2005-2008. \$148,800.
- Chaubey, I.** and M.D. Matlock. Watershed Response Modeling in 11-digit Arkansas Priority Watersheds. Arkansas Natural Resources Commission. 2005-2006. \$75,124.
- Chaubey, I.,** M.D. Matlock, and R.A. Morgan. GIS database development and watershed modeling in the Arkansas priority watersheds. Arkansas Soil and Water Conservation Commission. 2004 – 2005. \$60,671.
- Chaubey, I.,** M.D. Matlock, and R.A. Morgan. SWAT modeling in the Illinois River watershed. Arkansas Soil and Water Conservation Commission. 2004 – 2005. \$30,500.
- Matlock, M.D., **I. Chaubey,** and R.A. Morgan. Update of Arkansas Nonpoint Source Pollution Management Program. Arkansas Soil and Water Conservation Commission. 2004 – 2005. \$151,906.
- Chaubey, I.,** M.D. Matlock, E.D. Vories, and J. Popp. Development of an integrated water quality – water conservation program in the Arkansas Delta. USDA, National Integrated Water Quality Program. 2003 – 2006. \$550,000.
- Chaubey, I.,** M.D. Matlock, T.A. Costello, and B.E. Haggard. Sustainable Agriculture and water resource in Arkansas: A bioenvironmental engineering solution. EPA Region 6. 2003 – 2006. \$446,100.
- Chaubey, I.,** B.E. Haggard, and P. Srivastava. Differentiating runoff contributing areas for effective water quality management. USDA-NRI. 2003 – 2005. \$75,000.
- Chaubey, I.,** M.D. Matlock, T.A. Costello, and B.E. Haggard. GIS database development and watershed modeling in Arkansas Priority Watersheds. 2003 – 2004. Arkansas Soil and Water Conservation Commission. 2003- 2004. \$85,184.
- Chaubey, I.** and V. Garg. Use of hyperspectral remote sensing in lake water quality modeling. NASA/Arkansas Space Grant Consortium. 2003 – 2004. \$5,500.
- Bajwa, S.G., **I. Chaubey,** and D.R. Gardisser. Pesticide pollution risk assessment and mitigation training in Arkansas Delta. EPA Region 6. 2003- 2005. \$41,995.
- Chaubey, I.,** K. White, T.A. Costello, and B. Haggard.. Development of techniques for identifying and linking physical characteristics to surface runoff source areas. USGS/AWRC. 2003-2004. \$14,838.
- Chaubey, I.,** B.E. Haggard, M. Matlock, C.V. Maxwell, and P.A. Moore, Jr. Quantification of pathogen losses from swine manure treated fields under chemical and dietary modification conditions. USDA/National Center for Manure and Animal Waste Management. 2002 – 2004. \$12,345. Supplement to this grant. \$22,842.

Chaubey, I., M. Matlock, T.A. Costello, and B.E. Haggard. Development of a Decision Support System and Data Needs for the Beaver Lake Watershed. EPA/Arkansas Soil and Water Conservation Commission. 2002 – 2005. \$269,973.

Chaubey, I. Differentiating Runoff Contributing Areas from Pastures for Phosphorus Management. Research Incentive Grant. D.B. College of Agriculture, Food and Life Sciences. 2002 – 2003. \$9,997.

Matlock, M. (P.I.), **I. Chaubey**, B.E. Haggard, D. Storm, M. Smolen, and W. Focht. A Nutrient Management Decision Support System for the Eucha Basin. Nutrient Science for the Improved Watershed Management Program, USDA/EPA. 2002 – 2005. \$686,000.

Haggard, B.E. (P.I.), M. Matlock, **I. Chaubey**, and P.A. Moore, Jr. Phosphorus Concentrations and Flux in Streams and Reservoirs: Effect of Chemical Amendments on Sediment Phosphorus Flux and Implications for Watershed Management Strategies. USGS/Arkansas Water Resources Center. 2002 – 2003. \$24,812.

Dillahunty, W., **I. Chaubey** and M. Matlock. Quantification of Dissolved Oxygen, Nutrients and Other Water Quality Parameters as Affected by Agricultural and Urban Land Use. Undergraduate Research program. DBCAFLS. \$450.

Chaubey, I., M.A. Nelson, T.A. Costello, and K. Teague, and K. VanDevender. Optimizing BMPs, Water Quality and Sustained Agriculture in the Lincoln Lake Watershed. EPA/Arkansas Soil and Water Conservation Commission. 2001 – 2004. \$272,713.

Chaubey, I., T.A. Costello, M.A. Nelson, and T.S. Soerens. Critical evaluation of spatial and temporal data requirements for TMDL Development. USGS/Arkansas Water Resources Center. 2001 – 2002. \$20,305.

Bonzongo, J.J., E.E. Roden, H.C. Bryan, W.B. Lyons, **I. Chaubey**, and G.M. Ward. Social impact assessment of human exposure to mercury related to land use and physicochemical settings in the Alabama-Mobile river basin. 1998 – 2001. NSF/EPA/USDA. \$804,534.

Chaubey, I., L. Han, and S.N. Addy. Environmental and economic impact assessment of animal waste pollution potential using geographic information system. School of Mining and Energy Development, University of Alabama. 1998 – 1999. \$22,457.

TEACHING ACTIVITIES

Teaching Philosophy: I strive to be an ‘integrated scholar’ by integrating my teaching, learning, and research activities. I believe that my role as a teacher in the higher education system is to prepare motivated professionals who can make a positive difference in their area of expertise. I strongly believe in active learning. My classroom education emphasizes discussion along with lecture to facilitate active learning. While discussion about simplified problems in a classroom is needed to clarify a concept, I use real world problems in assignments to prepare students to apply classroom concepts to actual conditions. I believe in open door policy and encourage students to put forth their ideas and discuss their concerns so that the teaching process can be made more meaningful and objective.

Courses Taught

Course #	Title	Institution	No. of times taught
ABE591C ¹	Ecohydrology	Purdue	1
ABE591C/EAS591N ¹	Future of Water Resources	Purdue	1
BAST 2903	AGHE Appl. Micro Computers	U. Arkansas	2
BENG 2612	Design in Biological Engineering II	U. Arkansas	1
BENG4903	Natural Resources Engineering Nonpoint Source Pollution	U. Arkansas	3
BENG 4923 ¹	Engineering	U. Arkansas	2
BENG 5613 ¹	Modeling and Simulation	U. Arkansas	1
BENG 5923 ¹	NPS Pollution Control and Modeling	U. Arkansas	3
BENG 450(v)	Special problems (Undergraduates)	U. Arkansas	3
BENG 500(v)	Special Topics (Graduate)	U. Arkansas	3

¹New courses that were developed and taught by Dr. Chaubey

Undergraduate Advising: At the University of Arkansas, I advised approximately 12 undergraduate students each semester with proper course selection, degree check, and registration and have served as their official academic advisor. In addition, about 15 undergraduate students have worked on various research projects.

Graduate Committee Member

University of Arkansas

- **Regina Cumpton** (M.S.), Department of Crops, Soils, and Environmental Sciences
- **Chin Young Park** (M.S.), Department of Civil and Environmental Engineering
- **Sujit A. Ekka** (M.S.), Department of Biological and Agricultural Engineering
- **Dinesh Garg** (M.S.), Department of Biological and Agricultural Engineering
- **V. Vibhava** (M.S.), Department of Biological and Agricultural Engineering
- **Ray Avery** (M.S.), Department of Biological and Agricultural Engineering
- **Andrea Ludwig** (M.S.), Department of Biological and Agricultural Engineering
- **P. Shurgar**, (M.S.), Department of Biological and Agricultural Engineering
- **R.A. Morgan** (Ph.D.), Department of Biological and Agricultural Engineering
- **B. Kim** (Ph.D.), Environmental Dynamics
- **G. Rodriguez**, (Ph.D.), Agricultural Economics and Agri Business
- **H. Jin** (Ph.D.), Department of Biological Sciences, University of Alabama, Tuscaloosa.

Purdue University

- **Mark Thomas** (Ph.D.), Department of Agricultural and Biological Engineering
- **Vimal Mishra** (Ph.D.), Department of Agricultural and Biological Engineering
- **Srinivasulu Ale** (Ph.D.), Department of Agricultural and Biological Engineering
- **Mihoon Jeong** (Ph.D.), Department of Agricultural and Biological Engineering
- **Joseph Quansah** (Ph.D.), Department of Agricultural and Biological Engineering
- **Umarporn Charusombat** (Ph.D.), Earth and Atmospheric Sciences

Masters Thesis and Doctoral Dissertations Directed

Degree	Name	Title of Thesis/Dissertation	Year Degree Awarded
M.S. BE	Amy S. Cotter	Analysis of input data resolution for TMDL development	2002
M.S. BE	Debabrata Sahoo	Assessment of nutrient transport and dynamics in agricultural dominated streams	2003
M.S. BE	Sumit Sen	Quantification of internal phosphorus loading in the Beaver Lake, Northwest Arkansas	2004
M.S. BE	Richa Srivastava	A statewide modeling approach to quantify nutrient losses in Arkansas	2006
M.S. BE	Mansoor Leh	Differentiating runoff contributing areas in an Ozark watershed	2006
M.S. BE	Nitin Singh	Effect of diffuse light on remote sensing of water quality constituents	2007
M.S. BE	Brian Schaffer	Integrated assessment of water quality/water quantity issue in the L'Anguille River watershed	2007
M.S. ABE	Chetan Maringanti	Multiobjective optimization of BMPs in agricultural watersheds	2007
M.S. ABE	Katie Merriman	Quantification of nutrient dynamics in agricultural drainage ditches	2008 (expected)
M.S. ABE	Laurent Ahiablame	Nutrient attenuation under natural conditions in agricultural streams	2009 (expected)
Ph.D.	Vijay Garg	Development of a physically-based Monte Carlo model for lake water quality assessment	2006
Ph.D.	Kati L. White	Integrating watershed, stream, and lake water quality models for water quality management	2004
Ph.D.	Eylem Mutlu	Neural Network and Statistical Modeling for DSS Development	2006
Ph.D.	Li Chi Chiang	SWAT modeling to evaluate BMP performance in a CEAP watershed	2009 (expected)
Ph.D.	S. Singh		2010 (expected)
Ph.D.	Chetan Maringanti		2010 (Expected)

OTHER PROFESSIONAL EXPERIENCE

Assistant Research Scientist, Oct. 1997 to April 2000, Center for Freshwater Studies, University of Alabama, Tuscaloosa.

- X Developed and conducted research in the area of nonpoint source pollution control and modeling, best management practices, watershed/water quality management, wetland dynamics, biogeochemistry of nutrients/ metals in natural ecosystems, land use impact on ecosystem structure, function, and biodiversity, and application of GIS/remotely sensing in natural resource management.
- X Developed and submitted research proposals for funding to federal and state agencies.
- X Collaborated with multidisciplinary research teams at the Center for Freshwater Studies in developing research proposals for federal agencies.
- X Directed GIS laboratory at the Department of Biological Sciences and the Center for Freshwater Studies.

Graduate Research Assistant, Aug. 1994 to Oct. 1997, Department of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater.

- X Designed and conducted a research project to assess the impact of rainfall spatial variability on hydrologic/water quality models.
- X Collected and analyzed watershed/water quality data using a variety of parametric and nonparametric statistical methods and tools.
- X Modified and tested Agricultural Non Point Source (AGNPS) model to input grid-based rainfall and energy intensity values in the model.
- X Developed/Modified GIS-AGNPS interface.

Teaching Assistant, Aug. 1995 to Dec. 1995, Department of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater.

- X Prepared and graded homework for BIOEN 3323 (Soil and Water Resource Engineering).
- X Provided guest lectures on several occasions.

Graduate Assistant, Jan. 1992 to July 1994, Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville.

- X Assessed the effectiveness of best management practices in controlling nonpoint source pollution to surface waters from animal manures.
- X Collected and analyzed natural and simulated hydrologic/water quality data.
- X Developed and tested a computer simulation model for designing grass buffer strips to minimize animal waste transport to surface waters.

PROFESSIONAL AFFILIATIONS

- **Member**, ASAE (*Society for Engineering in Agricultural, Food, and Biological Systems*).
- **Member**, American Water Resources Association.
- **Member**, American Society for Engineering Education
- **Member**, Gamma Sigma Delta (*The Honor Society of Agriculture*).
- **Member**, Alpha Epsilon (*Agricultural Engineering Honor Society*).
- **Engineer-In-Training**, Alabama. No. 9990271

HONORS/AWARDS

- **New Holland Young Researcher Award, 2007.** American Society of Agricultural and Biological Engineering.
- **Outstanding Engineer Award, 2006.** Arkansas Section of the ASABE.
- **Faculty Research Award of Merit, 2006.** Gamma Sigma Delta.
- **ASAE Honorable Mention Paper Award,** “Water quality at the Buffalo National River, Arkansas, 1991 – 2001” published in the Transactions of the ASAE 44 (2). Out of 362 papers published by the ASAE, only 9 were selected for the Superior Paper Award and 9 for the Honorable Mention.
- **Best Teacher Award, 2005.** Biological Engineering Student Club, University of Arkansas.
- **Outstanding Researcher Award. 2002- 2003.** Department of Biological and Agricultural Engineering. University of Arkansas, Fayetteville.
- **Member of the Graduate Faculty,** University of Alabama, Tuscaloosa. 2001-2002. Appointed to serve on the dissertation committee of H. Jin, Ph.D. candidate in the Department of Biological Sciences.
- **Graduate Research Excellence Award,** Oklahoma State University, 1997. Physical Sciences and Technology Group.
- **Phoenix Award,** Oklahoma State University, 1997. Given to one Ph.D. and one M.S. student each year. I was the first Ph.D. student from the Department of Biosystems and Agricultural Engineering to get this award.
- **Merit Cum Means Scholarship,** Indian Council of Agricultural Research, 1986-1989.
- **National Scholarship,** Government of India. 1982-1986.
- **President,** Epsilon Beta Chapter of Alpha Epsilon, Agricultural Engineering Honor Society, Oklahoma State University, 1996-1997.
- **Vice-President,** Epsilon Beta Chapter of Alpha Epsilon, Agricultural Engineering Honor Society, Oklahoma State University, 1995-1996.
- **Treasurer,** Graduate Student Association, Oklahoma State University, 1995-1997.
- **President,** Friends of India Association, University of Arkansas, Fayetteville, 1993-1994.

SERVICES AND PROFESSIONAL ACTIVITIES

Purdue University

- Graduate Committee, College of Agriculture. 2008 – present
- Graduate Committee, College of Engineering. 2008 – present
- Junior Faculty Council. 2007- Present
- Geospatial Engineering and Surveying Programs Advisory Committee. 2007 – present
- Member, Graduate Committee. 2007 – Present. Department of Agricultural and Biological Engineering.

University of Arkansas

- **Member, Environmental Task Force**, CAFLS and the Division of Agriculture, University of Arkansas. 2002 – 2006. I was **selected by the University of Arkansas Division of Agriculture** to take a leadership role (with Dr. T.C. Daniel) in developing this computer software to prepare nutrient management plan for animal waste management in the Eucha-Spavinaw watershed. This software was selected by the Federal Court in Tulsa to meet the lawsuit settlement agreement between City of Tulsa/Tulsa Metropolitan Utility Authority and six poultry companies/City of Decatur (*Case No. 01 CV 0900 EA(C)*). The development and adoption of **this software enabled the court to lift moratorium on poultry litter application in this watershed**. The software is currently in use in the watershed for preparing nutrient management plans.
- **Chair, Graduate Committee**, Department of Biological and Agricultural Engineering, University of Arkansas. 2005 – 2006. As the Chair of this committee, I had taken a leadership role in developing policy for qualifying examination and candidacy examination for Ph.D. students, and criteria for deficiency courses for students admitted in the program without an engineering degree. In addition, the graduate committee oversaw the graduate curriculum and all graduate admissions in the department.
- **Graduate Committee**, Department of Biological and Agricultural Engineering, 2002 – 2006.
- **Ecological Engineering Committee**, Department of Biological and Agricultural Engineering, 2002 – 2006. **Chair**, 2000-2003.
- **Academic Matters and Curriculum Committee**, Department of Biological and Agricultural Engineering, 2002 – 2006. Worked with other faculty members to prepare **ABET materials**. This involved extensive review of course materials, educational outcome assessment, and document preparation. Worked with other faculty members to revise **BENG curriculum**, including review of credit hours required for degree in BSBE, review of required and elective courses, sequencing of course offerings, and revision of some of the course materials (e.g., BENG 4903: Natural Resources Engineering).
- **Teaching Quality Committee**, Department of Biological and Agricultural Engineering, 2002 – 2006.
- **Representative**, National Animal Manure Management Project.

- **Steering Committee**, Savoy 319 Project (Dr. C. Maxwell, P.I.)
- **Faculty Advisor**, Friends of India. 2001-2002.
- **Library Committee**, University of Arkansas, Fayetteville. 2000-2004.
- **CAFLS Computer and Technology Transfer Committee**, 2000-2006.
- **College of Engineering COOP Committee**, 2000-2005.
- **Computer Committee**, Department of Biosystems and Agricultural Engineering, Oklahoma State University, 1996-1997.
- **Library Advisory Committee**, Oklahoma State University, 1994-1995.

Professional Organizations

- **Chair, Arkansas Section of the ASABE. 2004-2005.**
- **Vice-Chair of Professional Development**, Arkansas Section of ASAE, 2001-2004.
- **Member, M-114, New Holland Young Researcher Award Committee, ASABE. 2008-2011.**
- **Member**, SW-21 (Hydrology Group), SW-22, SW-223 (Soil Erosion Research), and SW 224 (Pollution by Erosion) Committee, ASAE, 1997-present.
 - **Vice-Chair**, SW-21 (Hydrology Group), ASAE, 2005 – 2006.
 - **Chair, SW-21** (Hydrology Group). 2007-2008.
- **Member, T-09, Environmental Quality Coordinating Committee**, 2007 – present.
- **Reviewer** of manuscripts for Transactions of ASAE, Water Resources Research, and Journal of American Water Resources Association, ASCE Journal of Hydrologic Engineering, Journal of Hydrology, Journal of Environmental Quality, Soil Science Society of America Journal, Environmental Modeling and Software, Advances in Water Resources, Journal of Environmental Informatics.
- **Chair**, Poster Session on Hydrology and Water Quality, Annual International Conference of the ASABE, 2006, 2007
- **Chair** of a technical session in the annual Arkansas Water Resources Conference, 2002.
- **Chair** of technical sessions in the Annual Conference of ASAE, 2001, 2003, 2004, 2006, 2007.
- **Chair** of a technical session in the annual conference of American Water Resources Association, 1998.

Direct Service to People, Communities and Other Client Groups

- Working with a number of state and federal agencies to solve water quality problems that are regional and national in scope. My involvement in developing the **Eucha-Spavina Phosphorus Index (ESPI)** is an example of such an effort. I was **selected by the Division of Agriculture** to develop this index and the index was selected by the **federal court to lift a moratorium on poultry litter application** in the watershed and to develop nutrient management plans for animal manure management.

- I have organized at least six different workshops to train state agency personnel on using various mathematical models in assessing watershed land use impact on water quality.
- **Review Panelist:** National Science Foundation (NSF) - Graduate Fellowship program; USDA-NRI; USGS-104b and 104g programs.
- Worked with **Washington County Conservation District** to develop a participatory approach for issue identification, problem solving, and watershed management plan development for nonpoint source pollution control.