

Curriculum Vita

Sagar Gautam

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Current Position

Graduate Research Assistant (January 2015-present), Department of Biological Engineering, University of Missouri

Previous Position

Graduate Research Assistant (January 2013-December 2014, Department of Plant Sciences, South Dakota State University

Training Officer (August 2012-December 2012), Life School Center, Janakpur, Nepal

Education

PhD (in progress), Bio-Environmental Engineering, University of Missouri, Columbia, Missouri, *expected Spring 2018* Supervisor: Dr.Christine Costello

M.S., Soil Physics South Dakota State University, December 2014 Thesis Topic: Runoff Simulation using APEX from Long-Term No-Till and Grazed Pasture Watersheds. Supervisor: Dr.Sandeep Kumar

B.S., Agriculture Sciences, Banaras Hindu University, Varanasi, India 2012

Research

Research Interests

- Environmental analysis and modeling of water quantity and water quality parameter to save the contamination of water resources
- To assess the climate change impact on hydrology using the global circulation model coupled with hydrologic model for the impact assessment of the climate change on water resources
- Water quality modeling to determine maximum allowable loading to stream and lakes

Research Experience

- Hydrologic Modeling (both field and watershed scale)
- GCM Downscaling and Bias-correction (focus on statistical downscaling)
- Drought analysis (Meteorological, Hydrological and Agricultural droughts)
- Water and soil sampling and its lab analysis
- Calibration and uncertainty analysis

Publications

- Sagar Gautam, Christine Costello, Claire Baffaut, Allen Thompson, Bohumil M Svoma, Quang A Phung and Edward J Sadler (2017). Assessing Long-term Hydrologic Impact of Climate Change on an Agricultural Watershed using CMIP5 and SWAT Model. *Journal of Hydrology: Regional Studies* (under review)
- Sagar Gautam, Eric Gentil Mbonimpa, Sandeep Kumar, James Bonta, and Rattan Lal (2015). APEX model simulation of climate change impacts on runoff from a small no-till watershed. *Journal of Soil Water Conservation* 70:101-109
- Mbonimpa, E. G., Gautam, S., Kumar, S., Lai, L., Bonta, J., and X. Wang (2015). Combined PEST and Trial-Error (CPTE) Approach to Improve APEX Calibration. *Computers and Electronics in Agriculture*. Volume 114 Issue C, June 2015 Pages 296-303
- Kumar, S., Nakajima, T., Mbonimpa, E. G., Gautam, S., Somireddy, U. R., Kadono, A., Lal, R., Chintala, R., Rafique, R., and Fausey, N. (2014). Long-term Tillage and Drainage Influences on Soil Organic Carbon Dynamics, Aggregate Stability, and Corn Yield. *Soil Science and Plant Nutrition* 00, 1-11

Selected Conference Presentations

- Sagar Gautam, Christine Costello, Claire Baffaut, and Bohumil M. Svoma. 2016. Assessing long term hydrologic impact of climate change on an agricultural-dominated watershed using CMIP5 and SWAT model. Poster Presentation at the. International Symposium on Sustainable System and Technology 2016 (ISSST 2016) meeting at Phenoix, AZ. May 16-18, 2016.
- Sagar Gautam, Christine Costello, Claire Baffaut, and Bohumil M. Svoma. 2016. Assessing long term hydrologic impact of climate change on an agricultural-dominated watershed using CMIP5 and SWAT model. Oral Presentation at Mid-American Environmental Engineering Conference at Southern Illinois University Edwardsville. October 22, 2016.
- Quang A Phung, Allen L Thompson, Claire Baffaut, Christine Costello, John Sadler, Anthony Lupo, Bohumil M Svoma, Sagar Gautam*. 2016 Evaluation of the effect of climate and land use changes on hydrologic processes in the Salt River Basin, Missouri, United States. Poster presentation at American Society of Agricultural and Biological Engineers ASABE Annual International Meeting 2016.
- Kumar, S., S. Gautam, E. Mbonimpa, L. Lai, J. Bonta, X. Wang, and R. Rafique. 2015. A New Methodology for Calibrating Apex Model Using Combined PEST and Trial-Error Approach for Simulating Surface Runoff from Small Watersheds. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- Sagar Gautam, Christine Costello, Claire Baffaut, Quang A. Phung, and Bohumil M. Svoma 2015. Climate model biases and statistical downscaling for application in hydrologic model. Oral Presentation at International SWAT Conference at Purdue University, West Lafayette, IN. October 12-16, 2015

- Sagar Gautam, Sandeep Kumar, Eric Gentil Mbonimpa and James Bonta 2014. A New Methodology for Calibrating APEX Model using PEST to Simulate Agricultural Runoff. Poster Presentation at ASABE/CSBE North Central Intersectional Meeting at South Dakota State University, Brookings, SD March 28-29, 2014.
- Sagar Gautam, Sandeep Kumar, Eric Gentil Mbonimpa, James Bonta, Rattan Lal, Jeppe H Kjaersgaard, Sharon K. Papiernik and Jimmy R. Williams 2014. Simulating Runoff from Small Grazed Pasture Watersheds Located at North Appalachian Experimental Watershed, Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.
- Sagar Gautam, Eric Gentil Mbonimpa, Sandeep Kumar, Jonathan Witter, and James Bonta 2014. Extending Field-Scale Information to the Watershed Scale Using the Apex and SWAT Models. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.
- Sagar Gautam, Sandeep Kumar, Rattan Lal, James Bonta, Jonathan Witter, Yina Xie, Richard Moore, Eric Gentil Mbonimpa and Shiguo Jiang 2013. APEX Model Simulation of Runoff and Non-Point Source Pollutants from Watersheds Managed With Long-Term No-Till Management, Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tempa, FL. November 3-6, 2013.
- Sagar Gautam, Sandeep Kumar, Eric Gentil Mbonimpa and James Bonta 2013. APEX Model to Assess No-Till Management Effects on Runoff and Nutrient Losses from a Small Agricultural Watershed in Ohio. Oral Presentation at 2013 Eastern South Dakota Water Conference. October 30, 2013.

Teaching Experience

- Water Management Theory (BE 8250) Spring 2017- Graduate course covering unsaturated flow (With Dr. Allen Thompson and Dr. Stephen Anderson, University of Missouri)
- Soil Water Conservation Engineering (BE 4150) Fall 2016- Undergrad course covering the principle soil water conservation (With Dr. Allen Thompson, University of Missouri)
- Introduction to soil (PS-213) fall 2013- Undergraduate course covering introduction to soil physical and chemical properties. (With Dr. Sandeep Kumar, South Dakota State University)
- Environmental soil management (PS-362) spring 2014- Undergraduate course covering the soil and water erosion. (With Dr. Sandeep Kumar, South Dakota State University)

*Majority of this includes helping with grading and leading few classes not the entire course

Training and Conference Attended

- Employing Model-based Reasoning in Socio-Environmental synthesis (EMBeRS) PhD Training Workshop held July 11-22, 2016 at the University of Texas at El Paso.
- International Symposium on Sustainable System and Technology 2016 (ISSST 2016) meeting at Phoenix, AZ. May 16-18, 2016.
- Mid-American Environmental Engineering Conference at Southern Illinois University Edwardsville. October 22, 2016.
- SWAT Conference Purdue University, October 12, 2015 - October 16, 2015. Climate Change for Watershed Modeling Workshop, SWAT-MODFLOW Workshop, Advanced SWAT Course using SWAT-CUP
- ASA, CSSA and SSSA International Annual Meetings at Long Beach, CA, Nov. 2-5, 2014

- Eastern South Dakota Water Conference at South Dakota State University, Brookings, SD, October 30, 2013
- ASABE/CSBE North Central Intersectional Meeting at South Dakota State University, Brookings, SD Mar 28-29, 2014.

Professional Affiliations

- American Society of Civil Engineers
- Soil Science Society of America

Technical Knowledge and Skills

- R, ArcGIS (version 10.2), Matlab, APEX, SWAT, SWAT-CUP, TR55, HEC-Res, Ground Water Modeling System and PEST

Awards

Finalist in sigma XI graduate student research award 2013, SDSU Sigma Xi Chapter.

Third place in student poster competition in International Symposium on Sustainable System and Technology 2016 (ISSST 2016) meeting at Phoenix, AZ.

National Science Foundation travel grant for attending Symposium on Sustainable System and Technology 2016 (ISSST 2016) meeting at Phoenix, AZ.

Travel grant for attending the National Science Foundation-funded Employing Model-based Reasoning in Socio-Environmental synthesis (EMBeRS) PhD Training Workshop held July 11-22, 2016 at the University of Texas at El Paso.

References

References available upon request