SUSHANT MEHAN, Ph.D.

Research Associate, Biological Systems Engineering, University of Wisconsin-Madison, WI-53706
smehan@wisc.edu | +1-605-592-0908
LinkedIn | List of Publications on Google Scholar | ResearchGate

EDUCATION

Doctor of Philosophy (Agricultural and Biological Engineering) Aug 2018
Purdue University, West Lafayette, Indiana, USA
Dissertation Title: Impact of Changing Climate on Water Resources in the Western Lake Erie Basin Using SWAT (Read here)

Master of Technology (Agricultural Engineering) Aug 2014
Punjab Agricultural University, Ludhiana, India
Thesis Title: Studies on the Effect of Colored Mulches on Yield and Quality of Bell Pepper (*Capsicum annuum L.*) (Read here)

Bachelor of Technology (Agricultural Engineering) Jul 2011
Punjab Agricultural University, Ludhiana, India

RESEARCH INTERESTS

- Watershed hydrology, nutrient fate and transport, and water quality
- Digital water: nexus of sensors, machine -to machine (M2M) communication, information of technology (IoT), and advanced hydrologic and hydraulic modeling
- Hydro-informatics and geospatial statistics
- Advanced mathematics, statistics, data analytics, and computational infrastructure in water-resources management
- Integrated, interdisciplinary, and open hydrological sciences

TEACHING AND MENTORING PHILOSOPHIES

- Focus on foundationalism, pragmatism, technology-driven, and inclusive principles
- Meet students where they are, identify and encourage their unique skill sets
- Courses that I would like to develop:
  - Hydro-informatics for Natural Resources and Management
  - Stochastic Assessment and Time Series Analysis in Water Resources and Management

WORK EXPERIENCE

Mar 2022 – Present	Research Associate, University of Wisconsin, Madison, WI
Jun 2020 – Feb 2022	Postdoctoral Scholar, Ohio State University, Columbus, OH
Oct 2018 – May 2020	Agricultural Engineer, Formation Environmental LLC, Sacramento, CA
Jan 2016 – Aug 2018	Graduate Research Assistant, Purdue University, West Lafayette, IN
Jan 2015 – Dec 2016	Graduate Research Assistant, South Dakota State University, Brookings, SD
Jan 2012 – May 2012	Lecturer, Northwest Institute of Engineering and Technology, Punjab, India
Jul 2011 – Dec 2011	Graduate Engineer Trainee (GET), John Deere Pune Works (JDPW), India

SNAPSHOT OF IMPACT

- Number of Published Peer-Reviewed Articles (*Citations*) 17 (*280*)
- Number of Published Book Chapters (*Accepted for Publication*) 3 (*1*)
- Amount in Dollars ($) funded in grants as Primary Applicant/Co-PI ~ $2M
- Number of Manuscripts and Funding Proposals/Scholarship/Fellowship Applications Reviewed (*Number of Journals Served as Special Issue Editor, Reviewer*) 150 (*25*)
- Number of National and International Professional/Honor/Greek Societies 10
- Number of students mentored formally (Undergraduates/Postgraduates) 2/2

EXPERIENCE

RESEARCH

Department of Biological Systems Engineering, University of Wisconsin, Madison, WI

- Improve model simulations of freezing-thawing cycles in snow-dominated watersheds to quantify management-practice effectiveness in protecting water quality
- Enhance the effectiveness of water-quality models to simulate the fate and transport of phosphorus on and below the soil surface in a tile-drained dominated agricultural watershed
- Quantify and assess the simulation of the control drainage management practice to improve water-quality issues using the edge-of-field monitoring sites data and hydrologic modeling
- Assess the soil health and its impact on water quality management using hydrologic modeling and field experiments
- Boost hydrologic model performance using multi-objective calibration and validation using and modifying different digital algorithms and tools

Department of Food, Agricultural, and Biological Engineering, Ohio State University, Columbus, Ohio

- Improved simulations of in-stream biogeochemical processes to quantify nutrient fate and transport for watershed management using hydrologic modeling and in-field observations
- Evaluated drainage water-management practices using hydrologic modeling and in-situ observations to manage water resources
- Assisted with quantification of soil health practice effects on soil properties and nutrient loss in a watershed-scale hydrologic model
- Planned and managed the observed and modeled data repository for the lab

Formation Environmental LLC, Sacramento, California

- Improved crop-growth simulation models for 40 different crops using process-based computer models for California's Central Valley to quantify nitrate leaching loads
- Tested heat-storage components in the existing SEBAL (Surface Energy Balance) CalETa (California Actual Evapotranspiration) mapping program for the state of California to improve the simulation of evapotranspiration
- Applied statistics and data visualization for environmental mapping and design of different ecological/ meteorological variables
- Collaborated on an Industry-University model assessment study to quantify nitrate leaching in tomato-grown fields using the modeling and in-situ measurements

Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana

- Performed univariate and multivariate analysis to compare synthetic climate values with climate data for western Lake Erie Basin
- Analyzed long-term climate data simulated by stochastic weather generators to quantify their effectiveness in simulating climate for use in hydrologic models
- Evaluated different methods of bias correction for GCM (General Circulation Model) outputs to create a reliable future climate database
- Quantified nutrient transport in an agricultural tile-drained watershed for assessment of the climate-changing impact on water resources
- Applied remote sensing and data science to study the spatial and temporal extent of algae in Lake Erie

Department of Plant Science, South Dakota State University, Brookings, SD

- Quantified different types of droughts over long-term climate change for water-resource management planning using a process-based hydrologic model
- Assisted in radio-isotope study to quantify surface/groundwater interactions
- Applied remote sensing and GIS to estimate rainfall distributions over space using different spatial interpolation techniques

College of Agricultural Engineering and Technology, Punjab Agricultural University, Ludhiana, India

- Designed and conducted field-scale experiment evaluating the impact of different colored biodegradable plastic

mulches on plant microclimate
- Performed on-field and in-lab experiments to measure different physical, and chemical properties of the product along with the end season crop yields
- Applied the application of passive spectroradiometer to quantify the change in plant light environment

John Deere Pune Works (JDPW) Pvt. Ltd, Pune, India
- KAIZEN and SIX SIGMA applications in the off-road vehicles' manufacturing units
- Participated and contributed to identifying and implementing new and innovative ideas to reduce the time and increase the efficiency of a manufacturing line and supply chain
- Designed and conducted farmer's survey for prototype development

College of Agricultural Engineering and Technology, Punjab Agricultural University, Ludhiana, India
- Modified atmosphere packaging on minimally processed baby corn
- Analyzed the annual land-use change in the Moga District using Remote Sensing and GIS

COLLABORATIVE NATIONAL AND INTERNATIONAL RESEARCH

United States Department of Agriculture-Forest Services (USDA-FS), Santee Experimental Forest/Center for Forested Wetlands Research, Cordesville, South Carolina
- Partnered to develop a predictive model to simulate the occurrence of forest fire as a function of daily weather parameters

Department of Agricultural and Biological Engineering, University of Florida, Gainesville, Florida
- Collaborated on improving and testing the application of the colored plastic mulches on crop yield (*Capsicum annuum*) module in the Decision Support System for Agrotechnology Transfer (DSSAT) crop-growth simulation model

Department of Geography and Environmental Science, University of Reading, Reading, United Kingdom
- Partnered on improving the lake evaporation sub-module in the Soil and Water Assessment Tool (SWAT) for closed-lake systems, thus improving the overall hydrologic balance simulation

Department of Agricultural and Biosystems Engineering, South Dakota State University, Brookings, South Dakota
- Worked on simulating and assessing the socio-economic benefits of drainage-water management on a field plot using Soil and Water Assessment Tool Plus (SWAT+) under changing climatic patterns

Indian Council of Agricultural Research, New Delhi, India
- Performed and ran an analysis to prioritize micro-watersheds within a basin for watershed management using remote sensing and GIS during limited resources and mitigation plans

TEACHING/MENTORING/ADVISING

Department of Food, Agricultural, and Biological Engineering, Ohio State University, Columbus, Ohio
- Technical advisor on a senior design project — Aug 2021 – Feb 2022
  Stormwater Treatment for Algal Bloom Reduction
- Co-technical advisor on a senior design project — Aug 2020 – May 2021
  Rush Run Soil – Bioengineered Stream Restoration
- Co-advised and mentored Ph.D. students

Santee Experimental Forest, Cordesville, South Carolina
- Mentor to National Science Foundation Mathematical Sciences Graduate Intern from the Department of Mathematics and Statistics, College of Arts and Sciences, Washington State University, Pullman, WA funded through National Science Foundation – Mathematical Science Graduate Internship Proposal, NSF-MSGI — Summer 2021

Formation Environmental LLC, Sacramento, California

- Advised Postdoctoral Scholar at the University of California, Davis, to quantify impacts of land use and climate change on crop water use using hydrologic modeling
- Guest Lecture: ABT 182 / HYD 182 Environmental Analysis using GIS (Number of Students: 30) — Winter 2020
- Guest Lecture: HYD 110 Irrigation Systems and Water Management (Number of Students: 10) — Spring 2019

Department of Agricultural and Biological Engineering (ABE), Purdue University, West Lafayette, Indiana

- Facilitator of the Workshop on R for Beginners: I & II (Number of Students: 40) — Fall 2017/Spring 2018
- Guest Lecture: ABE 52700 Computer Models in Environmental and Natural Resources Engineering (Number of Students: 15) — Spring 2018
- Co-Advised/Mentored Summer Undergraduate Research Fellows (11-week program in the Summer of every year) — Summer 2017

Department of Plant Science, South Dakota State University, Brookings, SD

- Created and facilitated lab modules: PS 723-L Hydrologic Modeling (Number of Students: 15) — Fall 2015

Teaching Experience at Professional Conferences

At the American Society of Agricultural and Biological Engineering (ASABE) Annual International Meeting (AIM) (Workshop Facilitator / Instructor)

- Advanced Data Analytics for Water Resources Management using R — July 2022
  Attendance: 11
- Agricultural and Biological Engineering Data Handling Using R — July 2021
  Attendance: 40
- Agricultural and Biological Engineering Data Handling Using R — July 2020
  Attendance: 80
- Data Analytics using Python in Agricultural and Biological Engineering — July 2019
  Attendance: 41
- Introduction to Data Science in Agriculture with Python — July 2018
  Attendance: 30

SERVICE

Institutional Service

University of Wisconsin-Madison, Madison, Wisconsin

- Communication Director, University of Wisconsin-Madison Postdoctoral Association (UWPA) - 2022
- Advising graduate students' leadership to plan different events and develop departmental graduate student organization

Ohio State University, Columbus, Ohio

- Only Postdoc representative from all agricultural disciplines on Commercialization Training Module for Postdoc - A pilot program to promote entrepreneurship opportunities among academic scientists
- Member of the Organizing Committee of The Annual Postdoc and Ph.D. Career Expo

Purdue University, West Lafayette, Indiana

- President (2017-2018); Professional Development Chair (2016-2017) - ABE-GSA (Agricultural and Biological Engineering - Graduate Student Association)
- Department Graduate Student Ambassador - College of Agriculture Graduate Student Advisory Board May 2016-Apr 2017
- Executive Member - Purdue Climate Change Research Center (PCCRC) Post-Doc, Graduate Students Group (2016-2018)
- Member at Large (MAL); Professional Development Community (2017-2018): Alpha Epsilon (AE) Honors

Society, Purdue University Chapter

Academic Service

- Guest Associate Editor for "Digital Water: Computing Tools, Technologies, and Trends" in the 2024 issues of Journal of the ASABE and Applied Engineering in Agriculture. For more details click here
- Special Issue Editor for "Precision Management of Water Resources under Changing Climate and Weather Dynamics: Data, Simulation, Modeling, and Sustainability" in Sustainability (MDPI) For more details click here
- Reviewer Board: Sustainability, Water, Climate, Remote Sensing, Agronomy
- Proposal Reviewer: National Science Foundation, 2022
- Proposal Reviewer: Nazarbayev University Research Proposal Reviewer, 2018; 2019.
- Peer Reviewer for the following Journals: *Journal of Applied Meteorology and Climatology (JAMC), Journal of Hydrology, Journal of Soil and Water Conservation (JSWC), Journal of Environment Quality(JEQ), Science of the Total Environment (STOTEN), Ecology and Evolution, Journal of the American Water Resources Association (JAWRA), Journal of Water and Climate Change (JWC), Earth's Future, ISPRS International Journal of Geoinformation, Journal of the ASABE (old name: Transactions of the ASABE), CATENA, Applied Engineering in Agriculture, Journal of Food Processing and Preservation (JFPP), Journal of Applied Biological Research (ABR), Sustainability, Agriculture, Water, Climate, Precision Farming, Remote Sensing, Journal of Plant and Agricultural Research.*

Adjudicating Service

- 3MT Thesis Competition at Graduate Student Industrial Symposium (GRIS) organized by Graduate Student Association, Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, IN. 2022
- NCEES Land Surveying Special Award: Ohio Region Future City Competition organized by Future City Ohio Board. 2022
- 35th Annual Edward F. Hayes Graduate Research Forum. 2021
- The Ohio Academy of Science State Science Day organized by The Ohio State Chapter of Sigma Xi. 2021
- Spellman HV (Heating Ventilation) Clean Tech Competition – International Sustainability Innovation Competition. 2021; 2022
- ABE 205: Computations for Engineering Systems (Sophomore Course) Final Project at Purdue University, West Lafayette, IN (Course Offered Fall 2021)
- UCD Ag/Env Sciences (FFS) Field Day - AgriScience Fair 2019-2020
- Lafayette Regional Science and Engineering Fair, Undergraduate Research and Poster Symposium at Purdue University, Senior Capstone Project, and Big Ten Poster Competition 2016; 2017; 2018
- Visual Presentation Contest ASA-CSSA-SSSA Tri Society Annual Meeting, 2016; 2017
- ASABE Fountain Wars Design Competition and Open Format ASABE Annual International Meeting, 2017; 2018; 2019
- ASABE Adams and Foundation Engineering Scholarship, 2017-Present
- ASABE John C. Nye Graduate Fellowship, 2020 - Present
- The Lafayette Regional Science and Engineering Fair, 2016; 2017; 2018
- UC Davis Field Day: AgriScience Fair, 2020
- Undergraduate Research and Poster Symposium at Purdue University; 2016
- Undergraduate Capstone Project, 2016; 2017; 2018

Leadership and Service at the Professional Societies

American Society of Agricultural and Biological Engineers (ASABE) Click here and learn more about ASABE

- Session Chair and Moderator: Data and Water Management: Volume, Velocity, and Variety. 2022
- Session Chair and Moderator: Advances in Hydrologic Modeling of Agroecosystems of various Complexities-HYBRID. 2022
- Secretary: NRES 21 (Hydrology) (2023-2025)
- Chair, Young Professional Community (YPC) (2022-2023)
- Vice-Chair: Young Professional Community (YPC) (2021-2022)
- Vice-Chair: P-121 G.B. Gunlogson Environmental Design Student Competitions (2022-2024)
- Young Professional Community (YPC) Publication Council Representative (2019-2021)

- YPC Members at Large (MAL) (2017-2019)
- Public Relations Officer: CA/NV ASABE Section 2021 - 2022
- Award Chair: CA/NV ASABE Section, 2020-2021
- Executive Member: CA/NV ASABE Section, 2019-2020
- Student Competition Chair: G.B. Gunlogson Design Student Competition – Open Format 2019; 2020; 2021;2022
- Session Chair and Moderator: Hydrologic and Climate Data: Challenges and Opportunities, 2018; 2019; 2020; 2021

Association of Agricultural, Biological, and Food Engineers of Indian Origin (AABFEIO)

- President (2020-2021)
- Vice President (2019-2020)
- Secretary (2018-2019)

American Geophysical Union (AGU)

- Primary Convenor for the session "Hydroinformatics and Data Science: Pathways to Support Reproducible Watershed Modeling" for AGU Fall Meeting 2022
- Lead (Section Champion): AGU The ICON Special Collection specific to hydrology

PROFESSIONAL SOCIETY AFFILIATIONS

- American Society of Agricultural and Biological Engineers (ASABE)
- American Geophysical Union (AGU)
- Soil Science Society of America (SSSA)
- Crop Science Society of America (CSA)
- American Society of Agronomy (ASA)
- Tau Beta Pi (TBP), The Engineering Honor Society
- Alpha Epsilon (AE) Honors Society, Purdue University Agricultural and Biological Engineering Chapter

HONORS AND AWARDS

- Early Career Engineer of the Year from the Association of Agricultural, Biological, and Food Engineers of Indian Origin (AABFEIO) 2022
- Ohio State Post-Doctoral Association Professional Development Award 2020
- ASABE Outstanding Reviewer (NRES-Natural Resources & Environmental Systems) 2020
- "Highest Likes and Most Watched Video" Winner at ASABE Inspired Video Challenge 2020
- Top Reviewers in Environment and Ecology (Global Peer Review Awards powered by Publons) 2019
- Top Reviewers in cross-field (Global Peer Review Awards powered by Publons) 2019
- Outstanding ABE Ph.D. Student: Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, IN 2018
- ASABE New Faces: Professional 2018
- Special Mention Graduate Ag Research Spotlight 2018
- First Place Poster Competition, Second Place Oral Presentation, Second Place Pitch Your Thesis Competition at 5th ABE GSA Research and Industrial Symposium, Purdue University, West Lafayette, IN 2018
- Bilsland Dissertation Fellowship, College of Engineering, Purdue University, West Lafayette, Indiana 47907 2017-2018
- Indiana Soybean Innovation Competition (Winner of student competition): Team competition- The final product is filed for International Patent 2017
- Indian Council of Agricultural Research International Fellowship 2014
- University Fellow, Punjab Agricultural University, Ludhiana, Punjab, India 2012-to-2014
- Outstanding Best Student at Undergraduate Level, Punjab Agricultural University, Ludhiana, Punjab, India 2011
- Nominee of Indira Gandhi National Service Scheme (NSS) National Award 2011
- Dr. Dalip Singh Deep Memorial State Award 2010
- College Merit for Literary Events 2010
- Outstanding Student Indian Society of Technical Education (ISTE) 2010
- Best Speaker of the University (Punjab Agricultural University) 2008 and 2011

- Best Debater of the University (Punjab Agricultural University) 2007-to-2011
- Swami Vivekananda Youth Award 2010
- Ajit Matto Award for Outstanding Academic Performance 2010

EXTERNAL FUNDING

- Co-PD - USDA NIFA (National Institute of Food and Agriculture) BNRE (OSU (Ohio State University)) - **$750,000. Awarded (**Advancing knowledge and prediction of phosphorus dynamics in tile-drained landscapes - OHIO STATE UNIVERSITY) 2021
- Co-PD - USDA NIFA BNRE area of the Foundational and Applied Science (University of Wisconsin-Madison and OSU) - **$750,000. Awarded (**A multi-scale and regional approach to cold season hydrology and nutrient dynamics in agroecosystems for water quality protection - UNIV OF WISCONSIN) 2021
- Co-PI - Ohio Department of Higher Education Harmful Algal Bloom Research Initiative – Approx. **$300,000. Awarded** (Evaluating field-and watershed-scale water quality benefits of H2Ohio conservation practices in the Maumee River watershed – OHIO STATE UNIVERSITY) 2021
- Co-PI - Ohio Lake Erie Commission – Approx. **$250,000. Awarded** (Evaluating field-and watershed-scale water quality benefits of H2Ohio conservation practices in the Maumee River watershed using watershed modeling – OHIO STATE UNIVERSITY) 2021
- Fall Meeting General Student Travel Grant: (Adviser: Dr. Margaret W. Gitau). **$500. Awarded.** 2018
- Blosser Environmental Travel Grant: (Adviser: Dr. Margaret W. Gitau). **$1500. Awarded.** 2018
- Purdue Climate Change Research Center Spring Student Travel Grant: (Adviser: Dr. Margaret W. Gitau). **$1000. Awarded.** 2018
- Purdue Graduate Student Government (PGSG) Student Travel Grant: (Adviser: Dr. Margaret W. Gitau). **$250. Awarded.** 2017
- Purdue Climate Change Research Center Spring Student Travel Grant: (Adviser: Dr. Margaret W. Gitau), $**1100. Awarded.** 2017

PATENTS FILED (International) Click here to see more details on the application

SOY-BASED FILTRATION SYSTEM

The patent application relates generally to filter media useful for manufacturing air filters for residential and commercial office Heating, Ventilation, and Air Conditioning (HVAC), particularly to filters and filter media comprising soybean-based materials.

Publication Number	W0/2018/183236
Publication Date	October 4, 2018
International Application Number	PCT/US2018/024434

PUBLICATIONS

Peer-Reviewed Published Journal Articles

1. Kushwaha, N. L., Elbeltagi, A., **Mehan, S.**, Malik, A., and Yousuf, A. (2022). Comparative study on morphometric analysis and RUSLE-based approaches for micro-watershed prioritization using remote sensing and GIS. Arabian Journal of Geosciences, 15(7), 1-18. https://doi.org/10.1007/s12517-022-09837-2

2. Acharya, B., Ahmmed, B., Chen, Y., Davison, J., Haygood, L., Hensley, R., Kumar, R., Lerback, J., Liu, H., **Mehan, S.**, Mehana, M., Patil, S., Persaud, B., Sullivan, P., and URycki D. (2022). Hydrological Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science. Earth and Space Science Open Archive (ESSOAr). https://doi.org/10.1029/2022EA002320

3. Evenson, G., Osterholz, W. R., Shedekar, V. S., King, K., **Mehan, S.**, and Kalcic, M. (2022). Representing soil health practice effects on soil properties and nutrient loss in a watershed-scale hydrologic model. Journal of Environmental Quality. https://doi.org/10.1002/jeq2.20338

4. Kumar, M., Dogra, R., Narang, M., Singh, M., and **Mehan, S.** (2021). Development and Evaluation of Direct

Paddy Seeder in Puddled Field. Sustainability, 13(5), 2745. https://doi.org/10.3390/su13052745

5. Schull, V. Z., **Mehan, S.**, Gitau, M. W., Johnson, D. R., Singh, S., Sesmero, J. P., and Flanagan, D. C. (2021). Construction of Critical Periods for Water Resources Management and Their Application in the FEW Nexus. *Water*, *13*(5), 718. https://doi.org/10.3390/w13050718

6. Schull, V. Z., Daher, B., Gitau, M. W., **Mehan, S.**, and Flanagan, D. C. (2020). Analyzing FEW nexus modeling tools for water resources decision-making and management applications. *Food and Bioproducts Processing*, 119, 108-124. https://doi.org/10.1016/j.fbp.2019.10.011

7. **Mehan, S.**, Aggarwal, R., Gitau, M.W., Flanagan, D.C., and Frankenberger, J. (2019). Assessment of hydrology and nutrient losses in a changing climate in a subsurface-drained watershed. *Science of the Total Environment*, 688, 1236-51. https://doi.org/10.1016/j.scitotenv.2019.06.314

8. Kannan, N., Santhi, C., White, M.J., **Mehan, S.**, Arnold, J.G., and Gassman, P.W. (2019). Some challenges in hydrologic model calibration for large-scale studies: A case study of SWAT Model application to Mississippi-Atchafalaya River Basin. *Hydrology*, 6(1), 17. https://doi.org/10.3390/hydrology6010017

9. **Mehan, S.**, Gitau, M.W., and Flanagan, D.C. (2019). Reliable future climatic projections for sustainable hydro-meteorological assessments in the Western Lake Erie Basin. *Water*, 11(3), 581. https://doi.org/10.3390/w11030581

10. Gitau, M. W., **Mehan, S.**, and Guo, T. (2018). Weather generator effectiveness in capturing climate extremes. *Environmental Processes*, 5(1), 153-165. https://doi.org/10.1007/s40710-018-0291-x

11. Gitau, M.W., **Mehan, S.**, and Guo, T. (2017). Weather generator utilization in climate impact studies: Implications for water resources modelling. European Water, 59(3), 69-75. Click and read it here

12. Guo, T., **Mehan, S.**, Gitau, M. W., Wang, Q., Kuczek, T., & Flanagan, D. C. (2018). Impact of number of realizations on the suitability of simulated weather data for hydrologic and environmental applications. *Stochastic environmental research and risk assessment*, 32(8), 2405-2421. https://doi.org/10.1007/s00477-017-1498-5

13. **Mehan, S.**, Neupane, R.P., and Kumar, S. (2017). Coupling of SUFI 2 and SWAT for improving the simulation of streamflow in an agricultural watershed of South Dakota. *Hydrology Current Research*, 8 (3).280 https://doi: 10.4172/2157-7587.1000280

14. Neupane, R. P., **Mehan, S.**, and Kumar, S. (2017). Use of geochemical tracers for estimating groundwater influxes to the Big Sioux River, eastern South Dakota, USA. *Hydrogeology Journal*, 25(6), 1647-1660. https://doi.org/10.1007/s10040-017-1597-x

15. **Mehan, S.**, Guo, T., Gitau, M.W., and Flanagan, D.C. (2017). Comparative study of different stochastic weather generators for long-term climate data simulation. *Climate*, 5(2), 26. https://doi.org/10.3390/cli5020026

16. **Mehan, S.**, Kannan, N., Neupane, R.P., McDaniel, R., and Kumar, S. (2016). Climate change impacts on the hydrological processes of a small agricultural watershed. *Climate*, 4(4), 56. https://doi.org/10.3390/cli4040056

17. **Mehan, S.**, Kaur, P., and Singh, M. (2014). Studies on effect of storage on quality of minimally processed baby corn. *Journal of Food Processing & Technology*, 5(11). 388 https://doi: :10.4172/2157-7110.1000388

Book Chapters

1. **Mehan, S.** (2020). Transformation of pedagogical skills for 21st century. In George, A. Education For Future – An Archive of Humanities, Science and Technology for Sustainable Development (pp 135-139). Media House Publications, Delhi.

2. Srinivasulu, A., Femeena, P., **Mehan, S.,** and Raj, C. (2019). Environmental Impacts of Bioenergy Crop Production and Benefits of Multifunctional Bioenergy Systems. *Bioenergy with Carbon Capture and Storage*, pp. 195-217, Academic Press.

3. **Mehan, S.,** and Singh, K.G. (2015). Use of Mulches in Soil Moisture Conservation: A Review. *Best Management Practices for Drip Irrigated Crops*, *2*(24), 283.

Published and Cited Datasets

1. **Mehan, S.**, and Gitau, M. (2019). Climate Time Series Analysis using R [Data set]. Purdue University Research Repository. https://doi.org/10.4231/R77H1GTX (466 views; 101 Downloads; 2 Citations as of 07/2021)

2. **Mehan, S.**, and Gitau, M. (2019). Climate Projections for the Western Lake Erie Basin for medium and high emission scenarios for hydrologic modeling assessment studies (Indiana, Ohio, and Michigan) [Data set]. Purdue University Research Repository. https://doi.org/10.4231/R7C53J3W (401 Views; 77 Downloads; 2 Citations as of 07/2021)

3. **Mehan, S.**, and Gitau, M. (2019). Climate Projection Data for 21st Century for the Western Lake Erie Basin (Indiana, Ohio, and Michigan) [Data set]. Purdue University Research Repository. https://doi.org/10.4231/R7GX48SF (400 Views; 89 Downloads; 2 Citations as of 07/2021)

4. **Mehan, S.**, and Gitau, M.W. (2019). Spatial-Temporal Climate Projection Data for 21st Century for the Western Lake Erie Basin (WLEB) for Hydrologic Studies [Data set]. Purdue University Research Repository. https://doi.org/10.4231/R73R0R42 (362 Views; 77 Downloads; 2 Citations as of 07/2021)

Conference Proceedings Paper

1. Gitau. M.W. and **Mehan, S.** (2019). Impacts of Changing Precipitation Patterns on Hydrology and Pollutant Transport in a Subsurface-Drained Watershed. *11th World Congress on Water Resources and Environment (EWRA 2019): Managing Water Resources for a Sustainable Future*." Madrid, Spain, June 25-29. http://ewra.net/pages/EWRA2019_Proceedings.pdf pp 43-44.

Invited Talks

1. Guest Speaker at Annual International Meeting organized by American Society of Agricultural and Biological Engineers at Houston Texas from July 17 – 22, 2022 for Joint Special Session organized by three international communities within ASABE: Association of Overseas Chinese Agricultural, Biological & Food Engineers (AOCABFE), African Network Group of ASABE (ANGASABE), and Association of Agricultural, Biological, and Food Engineers of Indian Origin (AABFEIO). The title of the talk is "Adaptation vs. Adoption: Face of Agricultural and Biological Engineering and SARS CoV-2." **2022**.

2. Invited to talk at UF ABE Biocomplexity group on "Data and Humans: A perspective of an Agrineer." **2021**.

3. Panel member in an online workshop, "Obtaining a Postdoc Position," sponsored by the Graduate Education Office of the College of Engineering at Purdue University. November 17, **2020**.

4. Resource person at the two-day International Symposium "Role of science in the post-COVID-19 era" at Gujranwala Guru Nanak Khalsa College, Ludhiana. May 29, **2020**.

5. Panel Member at "The Grad School vs. Industry" session organized by Purdue Chapter of Society of Women Engineers. September 10, **2017**.

6. Guest Speaker at Indian Institute of Technology, Delhi, India, "Indian Water Resources under the Face of Climate Change: Issues and Remedial Measures." November 22, **2017**.

7. Guest Speaker at Water Technology Center, Indian Council of Agricultural Research, Delhi, India, "Implications of Changing Climatic Conditions on Indian Water Resources: Future Potential in Water Resource Research." November 23, **2017**.

8. Guest Speaker at National Institute of Food Technology Entrepreneurship and Management, Sonipat, Haryana, India, "Keys to Higher Education Overseas" November 21, **2017**.

Conference presentations

1. **Mehan, S.**, Kujawa, H., Murumkar, A., Shedekar, V., Kalcic, M., and King, K. (2022). Using Soil and Water Assessment Tool (SWAT) for simulating Drainage Water Management: Lessons Learned. American Society of Agricultural and Biological Engineers – Annual International Meeting (ASABE-AIM), Houston, TX. July 17-21.

2. **Mehan, S.**, Rao, P.D., and Amatya, D.M. (2022). Wildfire Prediction Modeling using fine resolution meteorological data. American Society of Agricultural and Biological Engineers – Annual International Meeting (ASABE-AIM), Houston, TX. July 17-21.

3. Murumkar, A., Martin, J., Kalcic, M., King, K., Shedekar, V., **Mehan, S.**, Kujawa, H. (2022). Simulating the watershed scale water quality impacts of Drainage Water Management in the western Lake Erie basin, USA. American Society of Agricultural and Biological Engineers – Annual International Meeting (ASABE-AIM), Houston, TX. July 17-21.

4. **Mehan, S.**, Kalcic, M., and Hood, J.M. (2021). Improving and testing in-stream phosphorus cycling in SWAT+. American Geophysical Union Fall Meeting, Hybrid Meeting, New Orleans, LA. December 13-17. https://doi.org/10.1002/essoar.10509563.1

5. **Mehan, S.**, King, K., Kujawa, H., Shedekar, V., Murumkar, A., and Kalcic, M.M. (2021). Evaluating the Effectiveness of SWAT (Soil and Water Assessment Tool) In Simulating the Impact of Drainage Water Management (DWM) System on Water Quality. American Society of Agricultural and Biological Engineers – Annual International Meeting (ASABE-AIM), Virtual Meeting July 12-16.

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21. **Mehan, S.**, and Gitau, M.W. (2018). Estimation and Correction of Bias of Long-Term Simulated Climate Data from Global Circulation Models (GCMs)-II. The 5th Annual ABE-GSA Industrial Research Symposium, Purdue University, West Lafayette, IN, February 8.

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23. **Mehan, S**., Guo, T., Gitau, M.W., and Flanagan, D.C. (2017). Weather Generator Performance in Representing Statistical Characteristics of Observed Data. ASABE Annual International Meeting, Spokane, WA, July 16-19.

24. **Mehan, S.**, Guo, T., Gitau, M.W., Wallace, C., and Flanagan, D.C. (2017). Hydrologic Model Performance as Related to Different Realizations of the Climate Generator Simulated Weather Data. ASABE Annual International

Meeting at Spokane, WA, July 16-19, 2017.

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26. **Mehan, S.,** and Gitau, M.W. (2017). Quantification of Bias from Global Circulation Model Outputs and its Correction. 38th Annual Indiana Water Resources Association (IWRA) Symposium, Turkey Run State Park, IN, June 28-30.

27. **Mehan, S.,** and Gitau, M.W. (2017). Extent of Uncertainty in Statistically Downscaled Climate Data. The 4th Annual ABE-GSA Industrial Research Symposium, Purdue University, West Lafayette, IN, February 16.

28. **Mehan, S.,** Guo, T., Gitau, M.W., and Flanagan, D.C. (2016). Performance Capability of Different Weather Generators in Simulating Long-Term Climate Data in the Great Lakes Region. University and Industrial Consortium at Dows Agro Science, Indianapolis, IN, October 25.

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32. **Mehan, S.,** Neupane, R.P., and Kumar, S. (2015). SWAT Model Calibration, Validation and Parameter Sensitivity Analysis using SWAT-CUP. ASA-CSSA-SSSA International Annual Meeting, MN, November 15-18.

33. **Mehan, S.,** Neupane, R.P., and Kumar, S. (2015). Projecting Climate Change Impacts on Surface Hydrology of a Small Agriculture-Dominated Watershed. International Soil and Water Assessment Tool Conference, Purdue University, West Lafayette, IN, October 14-16.

34. **Mehan, S.,** Kumar, S., and Lin Y. (2015). Application of GIS in Analyzing Rainfall Distribution Spatially in Skunk Creek Watershed. USGS EROS-SDSU Student Led Posters, USGS EROS Center, Garretson, SD, November 18.

35. Kumar, S., **Mehan. S.**, Neupane, R.P., Mbonimpa, E., Kjaersgaard, J., Jequet, J., Bly, A., Miller, M., and Smalley, S. (2015). Integrated Plan for Drought Preparedness and Mitigation, and Water Conservation at the Watershed Scale. NIWQP and AFRI PD Meeting Program, NC, July 27-28.

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37. **Mehan, S.,** and Singh, K.G. (2013). Use of Colored Mulches in Sustaining Indian Agricultural Production. National Seminar on Advances in Protected Cultivation Technical Session, New Delhi, India. *Proceedings of National Seminar on Advances in Protected Cultivation Technical Session: Protected Infrastructures & Allied Issues.* p. 138.