FAISAL HOSSAIN

Curriculum Vitæ

Civil and Environmental Engineering
Wilcox 167
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EDUCATIONAL HISTORY

University of Connecticut, Storrs, CT, USA
PhD Environmental Engineering,
August 2004
Dissertation: Investigating Error Propagation in Flood Prediction Based on Remotely Sensed Rainfall

National University of Singapore, Singapore
M. Eng, Civil Engineering,
May, 1999
Thesis: System-specific Statistical Modeling of SBR Bulking

Indian Institute of Technology, BHU, Varanasi, India
B.Tech, Civil Engineering,
May, 1996

EMPLOYMENT HISTORY

University of Washington, Department of Civil and Environmental Engineering
Seattle, WA, USA
Professor (2017 June –present)
Assistant Dean of Professional and Executive Programs (2026-present)

University of Washington, Department of Civil and Environmental Engineering
Seattle, WA, USA
Associate Professor (2014 February –2017 June)

Tennessee Technological University, Department of Civil and Environmental Engineering
Cookeville, TN, USA
Associate Professor (2009-2014 January) Assistant Professor (2004-2009)

AWARDS AND HONORS

Science/Research/Education Awards
AGU Ambassador Award, 2026
Fellow, American Geophysical Union, 2026
Editor's Citation in Excellence in Refereeing, Water Resources Research (AGU), 2025
NASA Early Adopter Award, 2024
UW Excellence in Global Engagement Award, 2023
Fellow, American Meteorological Society, 2022
Fellow, Environmental and Water Resources Institute, ASCE, 2022

John R. Kiely Endowed Professorship, 2021-2025
ASCE 2021 Editor's Choice Award in Journal of Hydrologic Engineering, 2021
ASCE EWRI 2020 Best Case Study Award in Journal of Hydrologic Engineering, 2021
AGU International Award, 2020
ASCE EWRI 2018 Outstanding Achievement Award, 2018
Outstanding Reviewer, Environmental Research Letters, 2016
ASCE Walter L. Huber Award, 2015
American Meteorological Society Editor's Award, 2015
AGU Charles Falkenberg Award, 2012
Graduate of the Last Decade (G.O.L.D) Award – University of Connecticut, 2012
US Fulbright Faculty Award, 2012
Caplenor Award (Tennessee Tech University Highest Award), 2012
ASCE Outstanding Reviewer Award, Journal of Hydrologic Engineering, 2011
Education Excellence Award, National Association of Environmental Professionals, 2010
Outstanding New Faculty Research Award, American Society of Engineering Education, 2009
NASA New Investigator Program Award, 2008
Outstanding PhD Thesis Award, School of Engineering, University of Connecticut, 2005
NASA Earth System Science Fellowship, 2002

Media/Outreach Awards

Total 66 awards/selections for "The Silent Route" (https://www.animatick.com/the-silent-route)
11 Best Film awards; 17 as finalists/semi-finalists/quarter-finalists; @ BAFTA/Oscar qualifying festivals
Seattle Tech-Doc Film Selection for Short Documentary "Cotton Fields," 2018
AGU Cinema Selection for Short Documentary "Cotton Fields," 2017
11th Eco-Film Festival Selection for Short Documentary "Cotton Fields," Malaysia, 2017
Tasveer South Asian Film Festival for Short Documentary "Cotton Fields" Seattle, 2017
Best Film "Cotton Fields" – University of Washington Makers Summit, Seattle, USA, 2017
9th Eco-Film Festival Selection for Short Documentary "Bay of Hope" Malaysia, 2015

AFFILIATIONS AND OTHER APPOINTMENTS

Member, NASA Drought Working Group (2026- present)
Co-chair, US-Iraq Science and Technology Dialogues, US State Department, 2022-2024
Deputy Program Associate, NASA Surface Water and Ocean Topography (SWOT) Mission, 2016-2022
Member, Physical Oceanography DAAC User Working Group, Jet Propulsion Lab/NASA, 2018-2021
Member, New Voices in Sciences, Engineering, and Medicine, National Academies of Science, Engineering and Medicine, 2018-2019
Vice-President of Academic Affairs, American Institute of Hydrology, 2017-2019
Member, Steering Committee, Earthlab, University of Washington, 2015-2018
Associate Professor, Interdisciplinary Arts and Sciences, University of Washington Tacoma, 2014-2016 [33% appointment at Tacoma with 67% appointment in Seattle]
Chair, Task Committee on Infrastructure Impacts of Landscape-driven Weather Change, ASCE, 2014-2017
Visiting Professor, Department of Infrastructure Engineering, University of Melbourne, Australia, December 1- December 31 2016

PUBLICATIONS

Refereed archival journal publications
[IF=Impact Factor (most recent); H-Index=55 (GS); 34 (WoS). Citations=10,120 (GS; as of 08/2026); Footnote: 1- graduate student advised as major advisor; 2- students advised for independent study or non-degree projects; 3-post-doctoral associate; 4-corresponding author]

In press/accepted/revision/review

200. Sharma[1], M., F. **Hossain**[4], S. Suresh[1], T. M. Pavelsky, S. Minocha[1] and S Khan[1], How Well Can the Surface Water and Ocean Topography (SWOT) Satellite Mission Observe Irrigation Canals? *Geophysical Research Letters,* 53, e2026GL124090. https://doi.org/10.1029/2026GL124090

199. Darkwah[1], G and F. **Hossain**[4] (2026) How Well Can Harmful Algal Bloom be Tracked in Riverine Environments using Landsat 8/9 and Sentinel-2 Satellite Data? *Remote Sensing Applications: Society and Environment,* https://doi.org/10.1016/j.rsase.2026.102260.

198. Minocha[1], S and F. **Hossain**[4] (2026) Hidden Sediments, Lost Capacity: How Fast Is the World Losing Reservoir Storage in a Changing Climate? *Proceedings of Nat. Acad. Sciences* (In revision)

197. Suresh[1], S., F. **Hossain**[4], and S. Minocha[1] (2026) Has Hydropower Strengthened or Undermined Agriculture in the Asian Green Revolution? *Earth's Future* (In review)

196. Khan[1], S., O. Wang, G. Darkwah[1] and F. **Hossain**[4] (2026). When Will the AI Cloud Recognize Its Watershed? (Commentary – ACM Communications) (In revision)

Published
195. Suresh[1], S., F. **Hossain,** V Mishra and N. Hossain (2026) GRAIN: Mapping the World's Irrigation Canals and Why it Matters for Water, Food and Climate, *Perspectives of Earth and Space Scientists (AGU)*, https://doi.org/10.1029/2026CN000327

194. Minocha[1], S and F. **Hossain**[4] (2026) RECLAIM: Reservoir Estimation of Capacity Loss using AI-based Methods, *Environmental Modeling Software*, vol. 204, https://doi.org/10.1016/j.envsoft.2026.107055

193. Khan[1], S., Z. N. **Hossain**, S. Suresh[1] and F. **Hossain**[4] (2026) The untapped Hydropower potential of World's Cities, *Earth's Future* Vol. 14, e2025EF007873. https://doi.org/10.1029/2025EF007873

192. Khan[1], S. and F. **Hossain**[4] (2026) sDRIPS: A Cloud-Based, Open-Source Python Package for Satellite-Informed Surface Water Irrigation Optimization, *Digital Water,* Vol. 4(1)

191. Khan[1], S, F. **Hossain**[4]**,** M. Ahamed (2026) Satellite Data Rendered Irrigation using Penman and SEBAL (sD.R.I.P.S) for Surface Water Irrigation Optimization, *Hydrology Earth System Science*, Vol. 30 (11), https://doi.org/10.5194/hess-30-3675-2026

190. Suresh[1], S., F. **Hossain[4]**, V Mishra, Z. Hossain (2026) GRAIN – A Global Registry of Agricultural Irrigation Networks, *Earth System Science Data,* Data, Vol. 18, 1855–1875, https://doi.org/10.5194/essd-18-1855-2026

189. Cebelaud, A., C David et al. (2025) Progress towards satellite requirements to capture water propagation in Earth's rivers, *Reviews in Geophysics,* Vol. 62(3), https://doi.org/10.1029/2024RG000871

188. Piland, N. C., T. B. A. Couto, M. Pulido-Velosa, et al. (2026). Public Participation in Tropical Conservation and Environmental Management Research: Toward a Locally Grounded and Reflexive Practice." *Biotropica* Vol. 58(1), e70149. https://doi.org/10.1111/btp.70149.

187. Darkwah[1], G and F. **Hossain**[4] (2025) Exploring the Potential of Remote sensing-based River Temperature Tool for Improving Columbia River Reservoir Management Towards Fish Abundance Outcomes, *Water Resources Research*, Vol. 61(9), https://doi.org/10.1029/2024WR039639

186. Minocha[1], S, and F. **Hossain**[4] (2025) GRILSS: Opening the Gateway to Global Reservoir Sedimentation Data Curation, *Earth System Science Data,* https://doi.org/10.5194/essd-2024-470.

185. Suresh[1], S and F. **Hossain**[4] (2025) Has Hydropower made the World more Flood-prone? *Earth's Future,* Vol. 13(9), https://doi.org/10.1029/2025EF006648

184. Minocha[1], S. P. Das[1] and F. **Hossain**[4] (2025) Reservoir Assessment Tool (RAT): A Python Package for monitoring the dynamic state of reservoirs and analyzing dam operations, *Digital Water*. Vol. 3(1), https://doi.org/10.1080/28375807.2025.2487762

183. Das[1], P. and F. **Hossain**[4] (2025) Multi-satellite Tracking of Surface Water Storage Change in the SWOT Era, *Earth and Space Science*, Vol. 2(6), https://doi.org/10.1029/2024EA004178

182. Vinogradova, N., T. M. Pavelsky, T. J. Farrar, F. **Hossain**, and Lee-Leung Fu (2025), A new look at Earth's water, energy, and climate with SWOT, *Nature Water*, DOI: 10.1038/s44221-024-00372-w, https://www.nature.com/articles/s44221-024-00372-w184

181. Ross, N., A. Rostami, H. Lee…..F. **Hossain**,…P. Towashiraporn (2024), Monitoring reservoir water elevation changes using Jason-2/3 altimetry satellite missions: exploring the capabilities of JASTER (Jason-2/3 Altimetry Stand-Alone Tool for Enhanced Research), *Journal of Digital Earth,* Vol. 17(1), DOI10.1080/17538947.2024.2406387.

180. Das[1], P., S. Suresh[1], F. **Hossain**[4], V. Balakrishnan, Jainet P J, H. Lee, M. Laverde, K. Hosen, C. Meechaiya, P. Towashiraporn. (2024) Forecast Informed Reservoir Operations using a Satellite Based Framework for Mountainous and High Precipitation Regions: The case of the 2018 Kerala floods, *ASCE Journal of Hydrologic Engineering*, vol. 30(2) https://doi.org/10.1061/JHYEFF.HEENG-627

179. Minocha[1], S., Pei-Hsin Pei, S. Khan, and F. **Hossain**[4] (2024), Factors influencing Lake Surface Temperature for reservoirs of the Columbia River Basin, *Northwest Science*, vol. 97(4), https://doi.org/10.3955/046.097.0403

178. Darkwah[1], G, F. **Hossain**[4], G. Holtgrieve, C. Seaton, D. Graves, S. Minocha[1], P. Das[1], S, Khan[1] S. Suresh[1] (2024) Reconstruction of the Hydro-Thermal History of Regulated River

Networks Using Satellite Remote Sensing and Data-driven Techniques, *Earth's Future*, vol 12(10), https://doi.org/10.1029/2024EF004815

177. Suresh[1], S. F. **Hossain**[4], S. Minocha[1], P. Das[1], S. Khan[1], H. Lee, K. Andreadis and Perry Oddo (2023). Satellite-based Tracking of Reservoir Operations for Flood Management during the 2018 Extreme Weather Event in Kerala, India, *Remote Sensing of Environment*, vol. 307, https://doi.org/10.1016/j.rse.2024.114149.

176. Khan[1], S, F. **Hossain**[4], T. Pavelsky, A. Gomez, S. Ghafoor, M. Lane, S. Minocha, Md. A. Bhuyan, T. A. Al Fayyaz, M. N. Haque, P. K. Sarker, P. P. Borua (2024), A Network Design Approach for Citizen Science-Satellite Monitoring of Surface Water Volume Changes in Bangladesh, *Environmental Modeling and Software*, vol. 172, https://doi.org/10.1016/j.envsoft.2023.105919

175. Minocha[1], S. F. **Hossain**[4]**,** P. Das[1], S. Suresh[1], S. Khan[1], G. Darkwah[1], K. Andreadis, H. Lee, G. Holt, S. Galelli (2023). Reservoir Assessment Tool: A scalable and easy-to-apply python based software architecture to empower the global water community, *Geosci. Model Development,* https://doi.org/10.5194/gmd-2023-130.

174. Das[1], P., F. **Hossain**[4], S. Minocha[1], S. Suresh[1], G. Darkwah[1], K. Andreadis, H. Lee, M. Laverde, P. Oddo (2023) ResORR: A Globally Scalable and Satellite Data-driven Algorithm for River Flow Regulation due to Reservoir Operations, *Environmental Modeling and Software,* vol. 176, https://doi.org/10.1016/j.envsoft.2024.106026

173. Nguyen, N.T. T.L.T. Du, H. Lee, F. **Hossain**, et al. (2023) Estimating the impacts of ungauged reservoirs using publicly available streamflow simulations and satellite remote sensing, *Remote Sensing*, 15(18), 4563; https://doi.org/10.3390/rs15184563

172. **Hossain**[4], F. A. Alwash, S. Minocha[1] and H. Eldardiry (2023) Restoring the Mesopotamian Rivers for Future Generations: A Practical Approach, *Water Resources Research,* vol. 59 (5), e2023WR034514

171. **Hossain**, F. (2022). Reimagining the Surface Water and Ocean Topography Mission as the "Landsat" of Surface Water", *IEEE Geoscience and Remote Sensing Magazine*, June 2022 (10.1109/MGRS.2022.3174624).

170. Chi-Hung Chang, H. Lee, S. K. Do, T. L.T. Du, K. Markert, F. **Hossain**, S. K. Ahmad, T. Piman, C. Meechaiya, D. D. Bui, J. D. Bolten, E. Hwang, H. C. Jung (2023). Operational forecasting inundation extents using REOF analysis (FIER) over lower Mekong and its potential economic impact on agriculture, *Environmental Modelling & Software,* vol. 162, 105643, https://doi.org/10.1016/j.envsoft.2023.105643.

169. Khan[1], S. F. **Hossain**[4], et al. (2023) Understanding Volume Estimation Uncertainty of Lakes and Wetlands Using Satellites and Citizen Science, *IEEE J STARS,* vol. 16, pp. 2386 - 2401

168. **Hossain**[4], F. et al. (2022) Building User-Readiness For Planned Satellite Earth Observing Missions: The Case of The Surface Water Ocean Topography Mission, Commentary, *AGU Advances*, vol. 3(6), https://doi.org/10.1029/2022AV000680

167. Das[4], P., F. **Hossain,** S. Khan[1], N. K. Biswas[1], H. Lee, T. Piman, C. Meechaiya, U. Ghimire, K. Hosen (2022) Reservoir Assessment Tool 2.0: Stakeholder driven Improvements to Satellite Remote Sensing based Reservoir Monitoring, *Environmental Modeling and Software,* vol. 157

166. Vu, D. T. Thanh Duc Dang, S. Galelli, and F. **Hossain** (2022). Satellite observations reveal thirteen years of reservoir filling strategies, operating rules, and hydrological alterations in the Upper Mekong River Basin, *Hydrology and Earth System Science*, https://doi.org/10.5194/hess-2021-360

165. **Hossain**[4], F., T. Ahmed, B.A. Hoque, S. Khanam, N. Biswas, M. S. K. Khan and M. Katagami (2022) Impact Evaluation of an Operational Satellite-based Integrated Rice Advisory System in Northeastern Bangladesh, *International Journal of Irrigation and Water Management*, ISSN 2756-3804 Vol. 9 (1), pp. 001-011.

164. Eldardiry, H., F. **Hossain**[4], M. Srinivasan and V. Tsontos (2022) Success Stories of Satellite Altimeter Applications, *Bulletin of American Meteorological Society*, vol. 103(1), E33-E53.

163. Biswas[1], N. and F. **Hossain**[4] (2022). A Multi-decadal Analysis of Impact on Water availability due to Reservoir Operation in Ungauged Regions, *J. Hydrometeorology*, vol. 23(1), pp. 75-81, doi.org/10.1175/JHM-D-21-0053.1.

162. Pielke Sr., R.A., J. Adegoke, F. **Hossain**, D. Niyogi (2021) Environmental and Social Risks to Biodiversity and Ecosystem Health – A Bottom-Up, Resource-Focused Assessment Framework, *Earth*, vol. 2(3), 440-456, https://doi.org/10.3390/earth2030026

161. Bose[1], I., F. **Hossain**[4], S. Jayasinghe and C. Meechaiya (2021) Case Study: Developing a baseline characterization of river bathymetry and time-varying height for Chindwin River in Myanmar using SRTM and Landsat data, *ASCE J. Hydrologic Engineering,* vol. 26(11). [Selected for EDITOR'S CHOICE SECTION]

160. Ahmad[1], S., F. **Hossain**[4], G. Holt, S. Galleli, and T. Pavelsky (2021) Predicting the likely thermal impact of current and future dams around the world, *Earth's Future*, https://doi.org/10.1029/2020EF001916.

159. Manuel Marcaida, Y. Farhat, E-Nieng Muth, C. Cheythyrith, L. Hok, G. Holtgrieve, F. **Hossain**, R. Neumann, Soo-Hyung Kim (2021), A spatio-temporal analysis of rice production in Tonle Sap floodplains in response to changing hydrology and climate, Agricultural Water Management, vol 258, 107183, https://doi.org/10.1016/j.agwat.2021.107183

158. Eldardiry[1], H. and F. **Hossain**[4] (2021) The Value of Long-term Streamflow Forecasts in Adaptive Reservoir Operation: The Case of High Aswan Dam in the Transboundary Nile River Basin, *J. Hydrometeorology,* https://doi.org/10.1175/JHM-D-20-0241.1

157. Little, Sarina B. Tamlin M. Pavelsky, F. **Hossain**[4], Sheikh Ghafoor, Grant M. Parkins, Sarah K. Yelton, Megan Rodgers, Xiao Yang, Jean-Francois Cretaux, Catherine Hein, Mohammad Arman Ullah, Debolina Halder Lina, Hanne Thiede, Darren Kelly, Donald Wilson, Simon N. Topp (2021), Monitoring variations in lake water storage with satellite imagery and citizen science, *Water*, 13(7), 949; https://doi.org/10.3390/w13070949.

156. Biswas, N[1]., F. **Hossain**[4], M. Bonnema, H. Lee, F. Chishtie (2021). Towards a Global Reservoir Assessment Tool for Predicting Hydrologic Impacts and Operating Patterns of Existing

and Planned Reservoirs, *Environmental Modeling and Software*, vol. 140, https://doi.org/10.1016/j.envsoft.2021.105043

155. Bose[1], I, F. **Hossain**[4], H. Eldardiry[1], S. Ahmad[1], N. K. Biswas[1], H. Lee, M. Aziz and M.S. Kamal (2021) Integrating Gravimetry Data with Thermal Infra-red Data from Satellites to Improve Efficiency of Operational Irrigation Advisory in South Asia, *Water Resources Research*, doi:10.1029/2020WR028654.

154. Eldardiry[1], H. and F. **Hossain**[4] (2021) Can Grand Ethiopian Renaissance Dam Live up to its Promise of Hydropower? *J of Renewable and Sustainable Energy,* vol. 13(2), doi: 10.1063/5.0028037.

153. Ahmad, S[1], F. **Hossain**[4], T. Pavelsky, G. Parkins, S. Yelton, M. Rodgers, S. Basile, S. Ghafoor, D. Haldar, R. Khan, N. Shawn, A. Haque and R. Biswas (2020). Estimating Volumetric Water Storage in Seasonal and Transboundary Runoff-Dominated Wetlands Using Citizen Science and Satellite Remote Sensing Data, *Water Resources Research*, vol. 56, doi.org/10.1029/2020WR027989.

152. Eldardiry[1], H. and F. **Hossain**[4] (2020) A Blueprint for Adapting High Aswan Dam Operation in Egypt to Challenges of Filling and Operation of the Grand Ethiopian Renaissance Dam, *Journal of Hydrology,* doi.org/10.1016/j.jhydrol.2020.125708

151. Biswas[1], N.K., F. **Hossain**[4], M. Bonnema, A. Aminul, R. Biswas, A. Buiyan, A. Hossain. (2020). A computationally efficient flashflood early warning system for a mountainous and transboundary river basin in Bangladesh, *J. Hydroinformatics*, doi.org/10.2166/hydro.2020.202

150. **Hossain**[4], F., N. Elmer, M. Srinivasan and A. Andral (2020) Accelerating Applications for Planned NASA Satellite Missions: A New Paradigm of Virtual Hackathons during Pandemic and Post-Pandemic Era, *Bulletin of American Meteorological Society (BAMS)*, vol. 101 (9), pp. E1544–E1554, doi.org/10.1175/BAMS-D-20-0167.1.

149. Elmer, N.E, C. Hain, F. **Hossain**, D. Desroches, C. Pottier (2020) Generating Proxy SWOT Water Surface Elevations Using WRF-Hydro and the CNES SWOT Hydrology Simulator, *Water Resources Research* https://doi.org/10.1029/2020WR027464.

148. Ahmad, S[1]., F. **Hossain**[4] (2020) Realizing Ecosystem-safe Hydropower from Dams, *Renewables: Wind, Water, and Solar*, vol. 7(2), doi.org/10.1186/s40807-020-00060-9

147. Beveridge[1], C., M. Bonnema and F. **Hossain**[4] (2019) Impacts of dam development and landscape changes on suspended sediment concentrations in the Mekong River Basin's '3S' tributaries: a satellite remote sensing perspective, *Journal of Hydrologic Engineering (ASCE)*, doi:10.1061/(ASCE)HE.1943-5584.0001949.

146. Chi-Hung Chang, H. Lee, D. Kim, E Hwang, F. **Hossain**[4], F. Chishtie, S. Jayasinghe, S. Basnayake (2020) Hindcast and forecast of daily inundation extents using satellite SAR and altimetry data with rotated empirical orthogonal function analysis: Case study in Tonle Sap Lake Floodplain, *Remote Sensing of Environment*, vol. 241 https://doi.org/10.1016/j.rse.2020.111732.

145. Kim, D, H. Lee, Hahn Chul Jung, Euiho Hwang, F. **Hossain**[4], Matthew Bonnema, Do-Hyuk Kang and Augusto Getirana (2020) Monitoring River Basin Development and Variation in Water

Resources in Transboundary Imjin River in North and South Korea Using Remote Sensing, *Remote Sensing*, vol. 2(1), 195, https://doi.org/10.3390/rs12010195.

144. Bonnema[1], M., F. **Hossain[4]**, B. Nijssen and G. Holtgrieve (2020) Hydropower's Hidden Transformation of Rivers in the Mekong, *Environmental Research Letters*, vol. 15(4), https://doi.org/10.1088/1748-9326/ab763d.

143. Ahmad[1], S. and F. **Hossain**[4] (2019). Forecast-Informed Hydropower Optimization at Long and Short-time scales for a Multiple Dam Network, *J of Renewable and Sustainable Energy*, vol. 12, (doi:10.1063/1.5124097).

142. Daly[1], K., S. Ahmad[1], M. Bonnema[1], C. Beveridge[1], F. **Hossain**[4], B. Nijssen, G. Holtgrieve (2020). Recent Warming of the Tonle Sap Lake, Cambodia: Implications for one of the World's Most Productive Inland Fisheries, *Lakes and Reservoir,* doi:1111/lre.12317.

141. Ahmad[1], S. F. **Hossain**[4], Hisham Eldardiry, T. Pavelsky (2019) A Fusion Approach for Water Area Classification using Visible, Near Infrared and Synthetic Aperture Radar for South Asian Conditions, *IEEE Geosciences Remote Sensing* (10.1109/TGRS.2019.2950705), Vol. 58(4), pp. 2471-2480.

140. **Hossain**[4], F., M. Bonnema, M. Srinivasan, E. Beighley, A. Andral, B. Doorn, I. Jayaluxmi, S. Jayasinghe, Y. Kaheil, B. Fatima, N. Elmer, L. Fenoglio, J. Bales, F. Lefevre, S. Legrand, D. Brunel, and P. Le Traon, (2020). The Early Adopter Program for the Surface Water Ocean Topography Satellite Mission: Lessons Learned in Building User Engagement during the Pre-launch Era, *Bulletin of American Meteorological Society,* March(2020) (https://doi.org/10.1175/BAMS-D-19-0235.1).

139. Eldardiry, H. and F. **Hossain**[4] (2019) Understanding the reservoir operating rules in the transboundary Nile River Basin using macroscale hydrologic modeling with satellite measurements, *Journal of Hydrometeorology,* (doi.org/10.1175/JHM-D-19-0058.1).

138. Eythorsson[1], D., S.K. Ahmad[1], S.M. Gardarsson, F. **Hossain** and B. Nijssen. (2018), Arctic climate and snow cover trends – Comparing Global Circulation Models with remote sensing observations, *International Journal of Applied Earth Observation and Geoinformatics,* vol. 80, pp. 71-81.

137. Ahmad[1], S and F. **Hossain**[4] (2019). A Globally Scalable Data-driven Technique for Forecasting of Reservoir Inflow for Hydropower Maximization, *Env. Mod. Soft,* vol. 119, pp. 147-165.

136. Peters-Lidard, C, F. **Hossain,** L.R. Leung, N. McDowell, M. Rodell, F. Tapiador, F. J. Turk and A. Wood (2018). 100 Years of Progress in Hydrology, *AMS MONOGRAPH* (Centennial Celebration series), vol. 59, chapter 25, https://doi.org/10.1175/AMSMONOGRAPHS-D-18-0019.1.

135. Ahmad[1], S and F. **Hossain**[4] (2019). A Web-Based Decision Support System for Smart Dam Operations Using Weather Forecasts, *Hydroinformatics* (doi: 10.2166/hydro.2019.116).

134. Ahmad[1], S and F. **Hossain**[4] (2020). Maximizing Energy Production from Hydropower Dams using Short-Term Weather Forecasts, *Renewable Energy*, vol.146, pp.1560-1577

133. Sikder, S. S. Ahmad[1], F. **Hossain**[4], A. Gebregiorgis and H. Lee (2018). Case Study: A Rapid Urban Inundation Forecasting Technique Based on Quantitative Precipitation Forecast for Houston and Harris County Flood Control District, *ASCE Journal of Hydrologic Engineering,* Vol. 24(8) (https://doi.org/10.1061/(ASCE)HE.1943-5584.0001807).

132. Chen[1], X. and F. **Hossain**[4] (2019) Understanding Future Safety of Dams in a Changing Climate, *Bulletin of American Meteorological Society*, vol. 100(8), August 2019, pp. 1395-1403

131. Eldardiry[1], H., X. Chen[1], A. Mahmood[1], F. **Hossain**[4], D.P. Lettenmaier, B. Nijssen (2018). Characterization of Atmospheric River Induced Precipitation and Snowpack over the Western United States, *Journal of Hydrometeorology*, https://doi.org/10.1175/JHM-D-18-0228.1

130. Bonnema[1], M. and F. **Hossain**[4] (2019). Assessing the Potential of the Surface Water and Ocean Topography Mission for Reservoir Monitoring in the Mekong River Basin, *Water Resources Research,* vol. 55(1), doi:10.1029/2018WR023743.

129. Chi-Hung Chang1, H. Lee, F. **Hossain**, S. Basnayake, S. Jayasinghe, F. Chishtie, D. Saah, H. Yu, K. Sothea, D. Du Bui. (2019). A Model-Aided Satellite-Altimetry-Based Flood Forecasting System for Mekong River, *Environmental Modeling and Software*, vol. 112, pp. 112-127

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Conference proceedings and other non-journal articles

- ***Fully refereed publications***

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1. **Hossain,** F. (2025) Satellite Remote Sensing for Water Management, Cambridge University Press (UK). Undergraduate Textbook (ISBN 978-1-009-45353-0)

2. **Hossain,** F. and M. D. Hossain. (2007). *Modern Concepts on Water Resources*, Published by University Grants Commission (Bangladesh). Printed by Global Printers (Bangladesh) Dhaka, Bangladesh.

3. **Hossain,** F. and Qishi Zhou (2022) "*Robots and other Amazing Gadgets Invented 800 years Ago,*" Mascot Books, ISBN 978-1-63755-385-5.

Parts of books (chapters in edited books)
1. Clark, E.A., S. Biancamaria, F. **Hossain**, J.-F. Crétaux, and D.P. Lettenmaier. (2015). Altimetry applications to transboundary river management, in. (Ed. J. Benveniste), *Altimetry Special Issue*, European Space Agency.

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Books edited

1. **Hossain**, F (Editor) *"The Secret Lives of Scientists, Engineers and Doctors, Vol. 2*", Mascot Books, ISBN 978-1-64543-446-7.

2. **Hossain**, F (Editor) *"The Secret Lives of Scientists, Engineers and Doctors, Vol. 1*", Mascot Books, ISBN 978-1-64543-445-0

3. **Hossain**, F. (Editor) *"Resilience of Large Water Management Infrastructures: Solutions from Modern Atmospheric Science,"* Springer-Verlag. ISBN-978-3-30-26431-4, (Publication Date: September, 2019).

4. **Hossain,** F (Editor) "*Earth Science Satellite Applications: Current and Future Prospects,"*Springer-Verlag. ISBN 978-3-319-33438-7, (Publication Date: May 2016). [9200 chapter downloads as of December 2019]

5. **Hossain,** F (Editor) 'Water Encyclopedia' for Elsevier Sciences 5 volume reference series on *"Climate Vulnerability: Understanding and Addressing Threats to Essential Resources"* (Series Editor Roger Pielke Sr) (Released April 2013 by Elsevier and Academic Press).

6. Gebremichael, M and F. **Hossain** (editors). *Satellite Rainfall Applications for Surface Hydrology'*, *Springer-Verlag*, 2009 (ISBN: 978-90-481-2914-0). *(*30,000+ chapter downloads; Among Springer's top 25% books)

Journal issues edited

2. Human impact on climate extremes for water resources infrastructure design, operations, and risk management (2013). *Earth Interactions* (with editors Alfred Kalyanpu and Steve Burian)

1. Satellites and transboundary water: Emerging ideas (2009) *Journal of American Water Resources Association.*

MISCELLANEOUS

Patents submitted and/or awarded - None

Other (Websites, software, wikis)

6. Global Registry of Agricultural Networks (GRAIN) – Public dataset https://doi.org/10.5281/zenodo.16786487
5. Global Reservoir Inventory of Lost Storage by Sedimentation (GRILLS) - https://osf.io/w4ug8/overview
4. Making access to water information a fundamental right for all – http://depts.washington.edu/saswe
3. Global Reservoir Monitoring System for democratization of water information – http://www.satellitedams.net and http://ratdocs.io
2. Cinematography for Science Communication – http://www.saswe.net/cinematography
1. UW Student Film Contest (Nation's First Film Contest for STEM Majors) – http://depts.washington.edu/uwoscars (2017, 2019)

Outside Professional Work for Compensation (1460s)

None

OTHER SCHOLARLY ACTIVITY

Invited lectures and seminars

1. The World's Irrigation Canals and Reservoirs: New Insights based on 40 years of record and the new SWOT Satellite Mission, *Indian Institute of Technology - Gandhinagar,* August 17, 2026, Gandhinagar, India
2. What if Rain Made Urban Solar Power Better? *Indian Institute of Technology - Gandhinagar,* August 18, 2026, Gandhinagar, India
3. The World's Irrigation Canals and Reservoirs: New Insights based on 40 years of record and the new SWOT Satellite Mission, *National University of Singapore,* August 12, 2026, Singapore
4. The World's Irrigation Canals and Reservoirs: New Insights based on 40 years of record and the new SWOT Satellite Mission, *Universiti Malaya,* August 11, 2026, Kuala Lumpur, Malaysia
5. Electrifying Our Rain, *National University of Singapore,* August 12, 2026, Singapore
6. A Long Research Journey on Dams and Reservoirs, *University of Washington*, CEE Fall Seminar, Oct 2, 2025, Seattle.
7. A Long Research Journey on Dams and Reservoirs, *National University of Singapore,* August 28, 2025, Singapore.
8. Towards Water-efficient and Low-carbon Irrigation for the World*, National University of Singapore,* April 26, 2024, Singapore.
9. Improving Agricultural Water Productivity in Coastal regions of Bangladesh, session talk at Harvard *Radcliffe Institute workshop* April 1-2, 2024, Cambridge, MA, USA

10. 10th Anniversary of GPM – Perspective from a Global User, *NASA Global Precipitation Measurement (GPM) Mission 10th Anniversary, Feb 27, 2024,* NASA Goddard Space Flight Center. MD, USA
11. Use of Satellite Technology in Bangladesh Agriculture: Entry To The Space Age, *Bangladesh Agricultural Research Council* July 29, 2023. Organized by Department of Agricultural Extension (DAE) of *Bangladesh Ministry of Agriculture* to celebrate the launch of Integrated Rice Advisory System.
12. Satellite-based Reservoir Assessment Tool for Tigris-Euphrates River System, *U.S.-Iraqi Research Engagement and Agenda Setting Meeting, Amman, Jordan, Jan 15-18, 2023*
13. Reservoir Assessment Tool 2.0: Stakeholder-Driven Improvements to Satellite Remote Sensing-Based Monitoring of Reservoirs, *Roger Pielke Sr Symposium, Invited session organizer, American Meteorological Society Annual Meeting*, Denver, January 2023.
14. Towards Climate-resilient, Water-efficient, Fuel-efficient and Decarbonized Rice Production System of Bangladesh, *Graduate Seminar, Biological Systems Engineering*, Washington State University, USA Sept 7 2022.
15. Towards Climate-resilient, Water-efficient, Fuel-efficient and Decarbonized Rice Production System of Bangladesh, *Workshop on Lass and Damage, International Center for Climate Change and Development,* Dhaka, Bangladesh, Aug 29, 2022.
16. Towards Climate-resilient, Water-efficient, Fuel-efficient and Decarbonized Rice Production System of Bangladesh, *Bangladesh Agricultural Research Council (BARC) Workshop Presentation to Ministry of Agriculture*, Dhaka, Bangladesh, Aug 17, 2022.
17. Towards Climate-resilient, Water-efficient, Fuel-efficient and Decarbonized Rice Production System of Bangladesh, *Invited Seminar*, International Islamic University Chittagong, Aug 13, 2022.
18. Growing More with Less, *National Workshop on Customized Irrigation and Climate Services,* Organized by Pakistan Council of Research in Water Resources, Islamabad, Pakistan, May 24, 2022.
19. How are Dams Changing Our Rivers in Developing Regions? *UW Osher Institute Freshwater Series,* March 3, 2022.
20. Producing More with Less using Sensing, Information Technology and Machine Learning, Keynote Speaker, *2022 International Conference on Innovations in Science, Engineering and Technology,* Chittagong, Bangladesh Feb 26, 2022.
21. How are Dams Changing Our Rivers in Developing Regions? *Terrestrial Water Seminar,* NASA Hydrological Science Branch, Goddard Space Flight Center, DC, April 5, 2021
22. How are Dams Changing Our Rivers in Developing Regions? *Graduate Seminar, University of Illinois, Urbana-Champaign*, March 12 2021.
23. Story telling in Science, Engineering and Medicine, CSBC/PS-ON Education and Outreach Program (Cancer Society), November 10, 2020.
24. AAAS Lecture -The Future of Water and Human Decision-making, *Meeting Food and Water Security Challenges in the Developing World with Models, Data and Stakeholder Engagement,* Feb 15 2020.
25. USAID invited Global Online Webinar for Agrilinks – Sustainable Food Systems. *Growing More with Less: Smart Technology Solutions to Feed the World*, Jan 29, 2020.
26. University of Washington Engineering Lecture Series – Fall 2019. *Growing More with Less: Smart Technology Solutions to Feed the World*, October 10, 2019. Lecture video online - https://www.youtube.com/watch?v=9OPq66LbFLs.
27. Asian Development Bank, Manila – Asia Water Forum-2018, *Mainstreaming Satellite Earth Observations and Smart Technology for Addressing Water-Food Security Challenges of Asia*, October 3, 2018.
28. USAID HQ, DC, *The Wonderful Experience of Serving On USAID PEER Projects: Lessons Learned for The Future*, March 14, 2018.

29. World Bank HQ, DC, *Feeding Asia: An Operational Irrigation Advisory System Using Earth Observations And Smart Technology*, March 14, 2018.
30. AAAS Annual Meeting – Invited Panel Talk, Austin, Texas, *Bringing the Societal Benefits of Satellite Remote Sensing in the Developing World: The Case for Water Security and GRACE*, February 15, 2018. (Jay Famiglietti presented on behalf of speaker).
31. American Geophysical Union (AGU) Fall Meeting- New Orleans Invited Talk, *Taking Research and Knowledge to the Common People: The Case for Water Security*, December 2017.
32. Program for Climate Change (PCC) – Invited Talk, *Management Challenges of World's Water Resources: A Developing World Perspective*, Friday Harbor, San Juan Islands, September 15, 2017.
33. World Bank HQ, DC, *Building Solutions for the Water Sector using Remote Sensing: A Developing World Perspective,* March 15, 2017.
34. Asian Development Bank HQ, Manila, Philippines, *Smart Use of Satellite Remote Sensing for Water Management and Food Security,* November 14, 2016.
35. University of Melbourne, Department of Infrastructure Engineering. Melbourne, Australia. *Management challenges of the world's water resources: a developing world perspective.* May 18, 2016.
36. Environmental Defense Fund (EDF)-San Francisco, Science Day Invited Speaker, *What must be done to best use satellites for social good?* February 10, 2016.
37. American Meteorological Society (AMS) 96th Annual Meeting - New Orleans, Invited Presentation on *"Perspective and plans for future observing systems in earth system science"*, January 11, 2016.
38. University of Washington, School of Forestry Sciences, *Management challenges of the world's water resources: a developing world perspective*, March 11, 2015.
39. NASA E2 Workshop Tacoma, Inaugural Speaker, *Globalizing societal application of scientific research and observations from remote sensing: The path forward*, June 23, 2015.
40. San Diego, NASA-CNES Surface Water Ocean Topography (SWOT) Mission Science Meeting – Keynote Lecture, *SWOT contributions to improved understanding of human impacts on hydrology*, January 2015.
41. University of Washington, Department of Civil and Environmental Engineering, *Advancing river modeling in ungauged basins: The case of Ganges Brahmaputra Meghna basins,* January, 2015.
42. University of Washington, Program for Climate Change (PCC) Seminar Series, *Advancing river modeling in ungauged basins: the case of Ganges Brahmaputra Meghna Basins,* December 2, 2014.
43. University of Houston, Department of Civil and Environmental Engineering, *Advancing river modeling in ungauged Basins: The case of Ganges Brahmaputra Meghna basins,* November 7, 2014.
44. WellSprings-2014 at Tacoma (WA), *Big Data, Little Water*, October 14, 2014.
45. Microsoft Research Faculty Summit for Latin America, Vina del Mar, Chile, *Delivering hydrological information for community empowerment: Opportunities and challenges for the semi-skilled consumer,* May 8, 2014.
46. University of Washington, Global Change Program, Department of Computer Science and Engineering, *Delivering hydrological information for community empowerment: opportunities and challenges for the semi-skilled consumer…and some after-thoughts on global health*, April 29, 2014.
47. University of Washington, Tacoma, *Empowering sovereign management of water resources: application of remote sensing to developing world problems,* February 24, 2014.

48. University of Washington, Freshwater Colloquium, *Empowering sovereign management of water resources: application of remote sensing to developing world problems,* Seattle, October 22, 2013.
49. Nangyang Technological University, *Understanding infrastructure resilience of dam-reliant cities under changing patterns of extreme weather*, Singapore, December 10, 2012.
50. University of Connecticut, Alumni Association G.O.L.D Award ceremony, *crossing the valley of death: promoting environmental research for societal applications*, Storrs, October 12, 2012.
51. Western Kentucky University, *Promoting the value of water cycle remote sensing and climate studies to non-traditional consumers*, *Western Kentucky University*, March 16, 2012.
52. Jet Propulsion Laboratory-Caltech, *Promoting the value of water cycle remote sensing and climate studies to non-traditional consumers*, Pasadena, March 12, 2012.
53. University of Texas-San Antonio, Department of Civil and Environmental Engineering, *Climate-feedback based paradigm for management and design of impounded river basins*, , November 18, 2011.
54. International Geosphere-Biosphere Program (IGBP), 3rd International iLEAPS Conference, Garmisch Partenkirchen, Germany, *A Bottom-up vulnerability approach to adaptation to climate and other threats*, September 22, 2011
55. NASA Goddard Space Flight Center, Greenbelt, *Impact of artificial reservoirs on local climate*, Terrestrial Water Cycle Seminar, May 26, 2011.
56. University of Mississippi, Department of Civil and Environmental Engineering, *The 21st century civil engineering program*, April 25, 2011.
57. University of Georgia, *Impact of artificial reservoirs on local climate*, Department of Geology, April 15, 2011.
58. University of Connecticut, Department of Civil and Environmental Engineering, *Impact of artificial reservoirs on local climate*, April 8, 2011.
59. University of South Carolina, Department of Civil and Environmental Engineering, *Of dams, transboundary water and their lesser known impacts*, April 2, 2010.
60. University of California-Irvine, Center for Hydrology and Remote Sensing, *Of dams, transboundary water and their lesser known impacts*, March 12, 2010.
61. Jet Propulsion Laboratory, Caltech, *Of dams, transboundary water and their lesser known impacts*, March 11, 2010.
62. Purdue University, Department of Agricultural Engineering/Civil Engineering, *Of Dams, Transboundary water and their lesser known impacts*, November 16, 2009.
63. West Virginia University Institute of Technology, ASCE Student Chapter Invited Speaker, 46th Convention, Montgomery, *Sustainable application of satellites for water resources management: past, present and future*, West Virginia, November 20, 2008.
64. Ohio State University, SWOT Hydrology Workshop, *Potential applications of SWOT data to international water management issues,* September 16, 2008.
65. Regional Symposium on Climate Change, Food Security, Sea Level Rise and Environment in South Asia, Dhaka, Bangladesh, *Understanding surface water flow and storage changes using satellites*. August 24, 2008.
66. Georesources Institute, Mississippi State University*,* Starkville, *Sustainable application of water-measuring satellites for water resources management: past, present and future,* April 4, 2008.
67. University of Tennessee, Knoxville, *Sustainable application of water-measuring satellites for water resources management: Past, present and future*, March 24, 2008.
68. Institute of Water Modeling (Bangladesh), *An overview of current research on advancing overland hydrologic application of satellite rainfall data at TTU*, July 24, 2007.

69. Vanderbilt University-Environmental Seminar Series, Nashville, *A paradigm for spatial mapping of groundwater contamination in rural settings: Lessons from arsenic contamination in Bangladesh*, April 6, 2007.
70. US Army Corps of Engineers, Engineering Research and Development Center, Vicksburg, *The challenges of flood monitoring across political boundaries: Taking stock of emerging opportunities and moving ahead*, November, 16 2006.
71. University of Mississippi, Oxford, *The challenges of flood monitoring across political boundaries: taking stock of emerging opportunities and moving ahead,* November, 17, 2006.
72. University of Connecticut, *The challenges of flood monitoring across political boundaries: taking stock of emerging opportunities and moving ahead*, May 11, 2006.
73. Indian Institute of Technology, Kanpur, India, *Assessment of remotely-sensed rainfall for monitoring of floods in the 21st century,* July 19, 2005.
74. Center for Environmental and Geographic Information System, Dhaka, Bangladesh, *Satellites for monitoring surface and sub-surface hydrologic calamities in Bangladesh: an assessment of opportunities and challenges*, May 11, 2005.
75. Oak Ridge National Laboratory, Environmental Sciences Division, *Assessment of remotely-sensed rainfall for monitoring of floods in the 21st century,* May 6, 2005.
76. NASA Goddard Space Flight Center, Hydrological Sciences Branch, Greenbelt, *Assessment of satellite rainfall for flood forecasting in international river basins*, February 11, 2005.
77. Sigma Xi Tennessee Tech. Chapter, *Assessment of satellite rainfall for flood forecasting in international river basins*, January, 20, 2005.
78. Tennessee Technological University, *Satellite-based flood prediction*, May 10, 2004.
79. University of Connecticut, Environmental Scholars Colloquium, Storrs, CT, *Assessment of current passive microwave and infra-red based satellite rainfall remote sensing for flood prediction of ungauged watersheds*, March 28, 2003.

Professional society memberships.
Professional Hydrologist. American Institute of Hydrology (License 14-H-6012; now expired)
Full Member, American Society of Civil Engineers (ID No. 434334)
Member, American Geophysical Union.
Member, American Meteorological Society.

GRADUATE STUDENTS

Doctoral Students (only chaired ones shown)

Student Name	Dissertation Topic	Current Position/Employer	Graduation Date
Pritam Das	Regulated Surface Water: How Much and Where is it Flowing?	Asst Professor, Indian Institute of Technology, Bombay	March 2025
Sanchit Minocha	Global Reservoir Sedimentation Monitoring from Space	MIT Center of Sustainability	May, 2026
Shahzaib Khan	Leveraging Satellite Remote Sensing for Surface Water Management	UW	December 2025
George Darkwah	Reservoir Water Quality Management from Space	HDR. Inc.	March 2026
Sarath Suresh	De-mystifying the role of Hydropower Dams for Flood Mitigation and Agriculture	Research Scientist, Virginia Tech	April 2026
Claire Beveridge	Application-oriented approaches to modeling and satellite-based monitoring of watershed sediment dynamics	Catholic Relief Services	June 2020
Xiaodong Chen	Probable Maximum Precipitation in a	Asst. Professor,	October 2017

	Changing Climate	University of Oklahoma	
Matthew Bonnema	Understanding the impact of Dams in Developing Regions using Satellite Remote Sensing	Research Scientist, NASA-JPL	Fall 2019
Hisham Eldardiry	Adaptive Reservoir Operation in the Transboundary Nile River Basin: Towards Win-Win Solutions	Research Scientist, Cornell University	March 2021
Nishan Biswas	Mainstreaming multi-mission satellite observations in operational water resources management	NASA Goddard Space Flight Center	March 2021
Shahryar Ahmad	Towards Forecast-informed Sustainable Hydropower Operations	NASA Goddard Space Flight Center	March 2021
Wondmagegn Yigzaw	Water sustainability of cities and dams	University of Houston	February 2016
Abel Woldemichael	Modification Of Regional Hydroclimatology In Impounded River Basins	N/A	June 2015
Abebe Gebregiorgis	Hydrologically-Relevant Merging Of High Resolution Satellite Precipitation Products for Hydrologic Application	Harris County Flood Control District, Houston, TX	June 2013
Ahmed Mohamed	A Comprehensive Observational Study On The Impact Of Artificial Reservoirs On Local Hydroclimatology	Mekelle University, Ethiopia	August 2013
Ling Tang	Transfer Of Uncertainty Of Space-Borne High Resolution Rainfall Products At Ungauged Regions	ESRI Inc.	August 2011

Masters Degrees (only chaired ones shown)

Student Name	Level of Supervision	Thesis/Paper Title	Completed (Year)	Current Employer
Mridul Sharma	Thesis	Developing SWOT-based Reservoir Storage Reanalysis Records	Fall 2026	UW
Sanchit Minocha	Thesis	Reservoir Assessment Tool 3.0: An open source and user-friendly modeling platform to Mobilize the Global Water Community	Fall 2023	UW
Pritam Das	Thesis	Reservoir Assessment Tool 2.0: Stakeholder driven improvements to Satellite Remote Sensing based Reservoir Monitoring	Fall 2022	UW
Shahzaib Khan	Thesis	Using Citizen Science and Satellites for Lake Volume Estimation	Fall 2022	UW
Indira Bose	Thesis	Making Smart Irrigation Smarter with GRACE/GRACE-FO Gravimetric Data	Winter 2021	Wolf Water Resources – Portland, OR
Nishan Biswas	Thesis	A scalable open-source web-analytic framework to improve satellite -based operational	Spring 2017	NASA

		water management in developing countries		
Shahryar K. Ahmad	Thesis	Optimizing Hydropower Dam Operations	Autumn 2017	NASA
Mehedi Maswood	Thesis	Advancing River Modeling Using Satellites	2014	Woolacotts Consulting,Australia
Adam Stratz	Thesis	PMP in a Changing Climate: Implications for Dam Design	2014	Department of Energy
Travis Hamby	Coursework only	Flood risk assessment of lakes and reservoirs within Cumberland river basin	2011	CTI Engineers Inc.
Caitlin Moffit	Thesis	Validation of NASA Global Flood Detection System in Bangladesh	2010	Tennessee Valley Authority
A H M. Siddique-E-Akbor	Thesis	The Surface Water and Ocean Topography Mission for Water Management in Bangladesh	2010	Institute of Water Modeling, Bangladesh (2010-2012)
Matthew Boynton	Thesis	Improving Engineering Education Outreach in Rural Counties through Risk Analysis and Hands-on Activities	2009	Engineering Coordinator, Virginia Tech.
Mohammed Chowdhury	Thesis	Improving spatial mapping of arsenic contamination in Groundwater	2009	British Petroluem
Nitin Katiyar	Thesis	Development of an Open-Book Watershed Modeling Framework for Flood Forecasting Systems in International River Basins	2007	Hydro-QUAL – New York
Amanda Harris	Thesis	Investigating Optimal Configuration of Hydrologic Models during Data Denial Situations Using Satellite Data	2007	US Army Corps of Engineers – Nashville District
Preethi Raj	Thesis	Error Budget Analyses of Hydrologic Models: Understanding Applications for Satellite Rainfall Data	2007	Returned to India

RESEARCH ACTIVITIES

Funded Research (Total ~ 15+ million USD; My Amount ~8 million USD)

Funding Agency	Title	Total Amount	University Matching, if any	My Amount	Role	Dates
USC and NSF	Impact and Scalability of a Satellite-Sensor Irrigation Advisory System	$50,000	$0	$50,000	PI	2026-2027
NASA	Quantifying the net impact of the SWOT	$824,500	$0	$824,500	PI	2024-2028

	mission in improving our understanding of human regulation of surface water around the world					
UAE Crown Farms	Satellite-based Irrigation Tracking System	$30,000	$0	$30,000	PI	2024-2025
NASA	Open Science Development of Reservoir Assessment Tool (RAT) Software for Enabling Global Water Science and Management Breakthroughs with the SWOT Mission	$54,414	$0	$54,414	PI	2024-2025
Yet2.com (via NASA)	Women's Aquaboost	$28,000	$0	$28,000	PI	2024-2025
NSF (via USC)	Piloting a Precision Landscape Irrigation Advisory System Using Soil Sensors, Satellites and A Low-Powered Wide Area Network	$50,000	$0	$50,000	PI	2024-2025
NASA	Strengthening Regional and National Capacity for Operational Flood and Drought Management Services for Lower Mekong Nations via Mekong River Commission and SERVIR-Mekong	$700,000	$0	$344,212	PI	12/22-12/25
NASA	Improved Reservoir Management with Simultaneous Monitoring of Water Quantity and Quality using Multiple Satellites, SWOT and RAT-WQ^2	$1,029,182	$0	$1,029,182	PI	06/22-05/26
NASA	Lake Observations from Citizen Scientists and Satellites: Validation of Satellite Altimetry to Support Hydrologic Science	$423,621	$0	$423,621	PI	06/21-12/25
NASA	Exploring SWOT nadir altimeter synergy with SWOT wide-swath interferometry (KaRIn) for improving hydrologic	$105,000	$0	$105,000	PI	06/22-05/23

	investigations of surface water dynamics					
JPL	SWOT Application Activities	$60,000	$0	$60,000	PI	11/21-09/22
JPL	Jason-3 Altimeter Activities	$40,000	$0	$40,000	PI	11/20-11/21
JPL	SWOT Application Activities	$60,000	$0	$60,000	PI	11/20-11/21
NASA	Operational Services for Water, Disaster and Hydropower Applications for Lower Mekong Populations Using NASA Earth Observations and Models	$661,000 (PI from University of Houston	$0	$333,000	Co-I	01/20-12/22
NSF	NSF Research and Training (NRT) - Training a Scientifically Innovative, Communication Savvy STEM Workforce for Sustaining Food-Energy-Water Services in Large and Transboundary River Ecosystems	$2.99 million	$0	$60,000	Co-PI	10/2019-09/2024
NASA	Tracking Water Storage in Lakes: Citizens and Satellites	$1.5 million (PI – from UNC)	$0	$300,000	Co-I	04/18 - 03/21
NSF	Linking Current and Future Hydrologic Change to Hydropower, Human Nutrition, and Livelihoods in the Lower Mekong Basin"	$1.24 million (PI from UW Fisheries)	$0	$280,000	Co-I	07/17-06/20
JPL	NASA Jason-2, Jason-3 Altimetry Missions Applications Activities	$50,000	$0	$50,000	PI	03/18-08/19
JPL	NASA Jason-2, Jason-3 Altimetry Missions Applications Activities	$50,000	$0	$50,000	PI	03/17-08/18
NASA	Building Lasting Capacity for Water Management in Vulnerable Deltas of Indo-China	$510,000 (PI from University of Houston)	$0	$280,000	Co-PI	07/16-06/19
NASA	Towards Operational Water Resources Management in South Asia Exploiting Satellite Geodetic and Remote Sensing Technologies	$ 1.48 million	$0	$914,000	PI	11/14-10/18
DoD	Effects of Global	$850,110	$0	$40,000	Co-I	5/15-

	Change on Extreme Precipitation and Flooding	(PI from UCLA)				4/18
USAID-DIV Stage 1	Satellite-based Flood Inundation Warning on Affordable Mobile Platforms to Empower Farmers	$175,000 (5 million & 15 million for Stage 2 and 3, respectively)	$25,000	$150,000	PI	10/15-09/17
NASA	Globalizing Societal Application of Scientific Research and Observations from Remote Sensing: The Path Forward	$93,437	$0	$93,437	PI	05/15-04/16
NASA	SWOT Science Team Preparations for Ground-truthing, Discharge Product Development and Water Management Applications in Asian River Systems	$428,437	$0	$428,437	PI	06/16-12/20
NASA	Operational Flood Forecasting in Flood-prone River Deltas of the Developing World: Setting the Path forward for Current and Future Satellite Water Missions	$90,000	$0	$90,000	PI	09/16-08/19
NASA	Improving the Accuracy and Reliability of Space-Borne Discharge Estimation from SWOT for Low-lying Humid Tropical Regions of the World	$215,740	$0	$215,740	PI	12/12-3/16
NASA	A Satellite-based Early Warning, Mapping and Post-Disaster Visualization System for Water Resources of Low-lying Deltas of the Hindu Kush-Himalayan Region	$780,000	$0	$660,000	PI	8/14-7/16
NASA	Toolbox Development for River Height Extraction from Radar Altimeters: Facilitating Global Applications using JASON-2	$59,500	$0	$29,500	PI	08/14-07/15
NSF	Bangladesh Delta: Assessment of the Causes Of Sea-Level	$138,733	$0	$138,733	PI	04/14-03/17

	Rise Hazards And Integrated Development Of Predictive Modeling Towards Mitigation And Adaptation (BAND-AID)					
NASA	The Future of Our Cities and Ageing Dams: Using NASA Satellites to Understand Changing Patterns of Infrastructure Safety for Resource-Hungry US Cities	$82,800	$0	$82,800	PI	08/13-07/16
NASA	Understanding Atmospheric Rivers, Terrain and Anthropogenic Land Cover Changes on Storm Modification around Large Dams using Multi-sensor Satellite Data, Cloud Tracking and Numerical Modeling	$82,800	$0	$82,800	PI	08/12-07/15
NASA	Modeling the hydrologically-relevant features of uncertainty of NASA's high resolution precipitation products for advancing global applications over ungauged regions.	$82,800	$0	$82,800	PI	08/08-07/11
US Dept. of State	Strengthening Institutional Resilience of Bangladesh to Recurrent Flooding By Improving Operational Capacity For Early Detection Using Satellites	$24,000	$0	$24,000	PI	07/12-06/13
NASA	Advancing the Hydrologic potential of NASA’s TRMM-based Satellite Rainfall Estimation System for Global Flood Monitoring in Anticipation of GPM	$310,000 (NASA New Investigator Program)	$0	$310,000	PI	07/08-06/12
NASA	Defining Optimality Criteria for the Effective Use of Satellite Precipitation Datasets in Land Surface Hydrology and	$425,000 (PI from Univ. Connecticut)	$0	$156,000	Co-PI	05/07-04/11

	Water Cycle Studies					
NASA	Validating Prototype GPM Data for SERVIR System in MesoAmerica	$30,000	$0	$30,000	PI	05/07-04/08
NASA	GPM Data Integration in HEC-HMS	$64,655	$0	$64,655	PI	05/07-04/08

DOCUMENTATION OF TEACHING EFFECTIVENESS

Course	**Title**	**Qtr**	**Cr. Hrs**	**Enroll-ment**	**Evaluation Response**	**Item 1**	**Item 3**	**Item 4**	**Avg (1-4)**
CEE 444	Capstone-Hydraulics and Environment	Spring 2026	5	24	11	4.0	4.1	3.7	3.9
CEE 478/CE WA 578	Water Systems Management & Operations	Winter 2026	3	40	19	4.3	4.4	4.4	4.4
CEWA 566	Satellite Remote Sensing for Water Resources	Fall 2205	3	13	9	4.8	4.9	4.9	4.9
CEE 444	Capstone-Hydraulics and Environment	Spring 2025	5	12	10	4.5	4.7	4.5	4.5
CEWA 579	Quant. Water Management	Winter 2025	3	5	2	3.5	3.5	3.5	3.5
CEWA 566	Satellite Remote Sensing for Water Resources	Fall 2024	3	5	5	4.9	4.9	4.9	4.9
CEE 444	Capstone-Hydraulics and Environment	Spring 2024	5	14	10	3.8	3.5	3.5	3.7
CEE 478/CE WA 578	Water Systems Management & Operations	Winter 2024	3	43	27	4.9	4.8	4.8	4.8
CEWA 566	Satellite Remote Sensing for Water Resources	Fall 2023	3	8	6	4.5	4.2	4.8	4.1
CEE 444	Capstone – Hydraulics and Environment	Spring 2023	5	22		4.2	4.2	4.1	4.2
CEWA 579	Quantitative Water Management	Winter 2023	3	22	9	4.1	4.4	3.8	4.1
CEWA 566	Satellite Remote Sensing for Water Resources	Fall 2022	3	7	7	4.2	4.9	4.9	4.7
CEE 444	Capstone – Hydraulics and Environment	Spring 2022	5	23	20	4.4	4.4	4.5	4.4
CEWA	Water Systems	Winter	3	46	29/46	4.6	4.5	4.7	4.6

578/CEE 478	Management & Operations	2022							
CEWA 566	Satellite Remote Sensing for Water Resources	Fall 2021	3	13	13/13	4.9	4.9	4.9	4.9
CEWA 566	Satellite Remote Sensing for Water Resources	Fall 2020	3	14	9/14	4.2	4.8	4.7	4.5
CEE 444/445	Capstone-Hydraulics and Environment	Spring 2020	5	12	8/12	4.3	4.3	4.6	4.5
CEWA 578	Water Management	Winter 2020	3	19	19/19	3.9	4.3	4.3	4.1
CEWA 566	Satellite Remote Sensing for Water Resources	Autumn 2019	3	14	12/13	4.5	4.7	4.6	4.5
CEE 444	Capstone-Hydraulics and Environment	Spring 2019	5	15	15/15	4.3	4.0	4.0	4.1
CEWA 578	Water Systems Management & Operations	Winter 2019	3	32	32/32	4.5	4.5	4.5	4.5
CEWA 566	Satellite Remote Sensing for Water Resources	Autumn 2018	3	14	14/14	4.6	4.4	4.5	4.5
CEE 444	Capstone-Hydraulics and Environment	Spring 2018	5	12	12/12	3.3	4.5	3.8	3.7
CEWA 579	Quantitative Water Management	Winter 2018	3	22	19/22	4.2	4.4	4.2	4.1
CEE 444	Capstone – Hydraulics and Environment	Spring 2017	5	20	19/20	3.7	3.5	3.4	3.5
CEWA 579	Quantitative Water Management	Winter 2017	3	9	9/9	3.9	4.6	4.1	4.0
CEWA 566	Satellite Remote Sensing for Water Resources	Autum 2016	3	14	14/14	3.5	4.3	4.1	3.9
CEWA 579	Quantitative Water Management	Winter 2016	3	15	15/15	3.6	4.1	4.3	3.7
CEWA 566	Satellite Remote Sensing for Water Resources	Spring 2015	3	7	7/7	4.4	4.5	4.4	4.3
CEWA 566	Satellite Remote Sensing for Water	Spring 2014	3	17	12/17	3.2	3.2	3.3	3.3

	Resources								

PEER TEACHING EVALUATION

Course	Quarter	Reviewer
CEE 444	Spring 2025	Prof. Erkan Istanbulluoglu
CEWA 578/CEE478	Winter 2022	Prof. Rebecca Neumann
CEWA 579	Winter 2016	Prof. Jim Thomson
CEWA 566	Spring 2015	Prof. Andy Jessup

SERVICE

Departmental service
Task leader for Increasing Enrollment in CEE (under UG committee), 2022-2024
Education Committee (Grad Affairs), 2023-2024
EWP Area Co-Rep, 2022-2024
Beautification of CEE Wall space with CEE Mission Visuals, Plants 2023-2024
Area Rep for Hydrology and Hydrodynamics, 2021-2024
Faculty advisor, *American Water Resources Association* UW Chapter, 2023-2024
Promotion and Tenure Committee, 2018-2019 (Chair in 2019)
Undergraduate Affairs member, 2014-2021
Mentor Committee for CEE faculty
Established a 0.5 million dollar Endowment for Graduate Fellowships for Ivanhoe Foundation in 2020

College service
College P&T Council, 2024-2026
Selection Committee, Global Engagement Award, Office of Global Affairs, UW, 2025
Selection Committee, Diamond Award, 2023-2024
Executive Committee, Future Rivers, NSF Research and Training, 2019-2024
Faculty advisor (with Becca Neumann), *Engineers without Borders* UW Chapter, 2016-2019
EarthLab, Steering Committee, 2017-2018

University service
Fulbright review panel, 2020
Faculty senate, 2015-2019
Royalty Research Fund Panel – 2018-2019

Professional society service
Co-Chair, US-Iraq Science and Technology Dialogues, US State Department, 2022-2024
Deputy Program Associate, NASA Surface Water and Ocean Topography (SWOT) Mission, 2020-2023.
Member, New Voices in Science, Engineering and Medicine, National Academies, 2018-2020
Vice President of Academic Affairs, American Institute of Hydrology, 2017-2019
Member, Scientific Advisory Group for A-CCP, NASA, 2018-2019
Member, PO.DAAC User Working Group, 2018-2022
Editor, Journal of Hydrometeorology 2015-2020
Associate Editor, Journal of Hydrometeorology, 2014-2015
Chair of ASCE Task Committee (under Environment and Water Resource Institute of ASCE) on *"Infrastructure Impacts of Landscape-driven Weather Change"* 2014-2017
Voting Member, ASCE Watershed Management Technical Council, 2014-present
Award Reviewer, American Society of Engineering Education, 2014-2015

Falkenberg Award Committee, American Geophysical Union, 2015-2017
Science Team member and Applications Lead, NASA-CNES SWOT mission, 2016-present
Associate Editor, Journal of Hydrometeorology, 2012-2013
Science Definition Team member, NASA-CNES SWOT mission, 2012-2014
Associate Editor, *Journal of American Water Resources Association* JAWRA. 2006-2010
Working Group Co-Chair, *Hydrologically Relevant Error Metrics for Satellite Rainfall Data,* International Precipitation Working Group (IPWG) – PEHRPP Workshop, World Meteorological Organization, Geneva, Switzerland, December 3-5, 2007.
Session Chair, *Hydrological Sciences for Managing Water Resources of the Asian Developing World*, Guangzhou, China, June 9, 2006.

International, national or governmental service

Site Reviewer, National Science Foundation, 2024
NASA Commercial Satellite Proposal Review Team, 2024
Reviewer *National Academies of Science, Engineering and Medicine, Board on Atmospheric Sciences and Climate (BASC), Water Science and Technology Board (WSTB)*, 2024
NASA Satellite Mission Proposal Review Team, 2023
US Fulbright Program Review Panel (South and Central Asia) – 2014
US PI support (unfunded) for NASA-USAID PEER project *Scaling up of satellite-assisted flood forecasting systems in south and southeast Asian nations*; 2015-2017.
US-PI support (unfunded) for NASA-USAID PEER project *Application of geodetic, satellite remote sensing and physical modeling tools for management of operational groundwater resource in the Red river delta*, *Vietnam*; 2015-2018.
US PI support (unfunded) for NSF-USAID PEER project *Improving adaptation against coastal vulnerability and enhancing flood forecasting skill in Bangladesh through a satellite data integrative modeling framework in a changing climate,* 2014-2017.
Point of Contact and Instigator of MOUs for UW Civil Engineering with International Center for Integrated Mountain Development (ICIMOD), Pakistan Council of Research in Water Resources (PCRWR), Nanyang Technological University- Singapore (NTU) and Institute of Water Modeling (IWM), 2014-2018.
Coordinator for curriculum development of the undergraduate civil engineering program for the Kurdistan Regional Government (Iraq). 2009-2010.
Hosted visiting faculty from Koya University (Iraq) on curriculum development. 2009-2010.
Proposal review panelist, *National Science Foundation (NSF) Graduate Fellowship Program,* 2005-2007.
Proposal review panelist for NSF *TUES Program* 2012-2014.
NASA ROSES proposal review panelist on Earth Science and Applied Sciences 2010-2013.
Proposal Reviewer for *NASA-ROSES,* 2006-201present
Proposal Review for *NSF,* 2007-present
Proposal Reviewer for *Hong Kong Research Grants Council,* 2007
Proposal Reviewer for *Swiss National Science Foundation*, 2007
Proposal Reviewer for *Mathematics of Information Technology and Complex Systems Network of Centers of Excellence* (MITACS-NCE) 2004-2012.

All other service

Lead Organizer, *NASA SWOT User Workshop for Bangladesh Water Development Board*, December 18-20, 2023
Lead Organizer, NASA SWOT User Workshop titled "3rd *SWOT Virtual Early Adopter Hackathon,*" University of Washington, from April 25-28, 2022.
Lead Organizer, NASA SWOT User Workshop titled "2nd *SWOT Virtual Early Adopter Hackathon,*" University of Washington, from March 8- March 11, 2021

Lead Organizer, NASA SWOT User Workshop titled "1st *SWOT Virtual Early Adopter Hackathon,*" University of Washington, from May 26-May 29, 2020

STEM Education and Outreach for Diversity, Equity and Inclusion for National Academies NEW VOICES.

Project lead for Children's Book "The Secret Lives of Scientists, Engineers and Doctors" series (spin-off from NEW VOICES)

Lead Organizer, NASA SWOT User Workshop titled "*2nd SWOT Early Adopters Training Workshop*" held in CNES HQ, Paris, May 20-21, 2019.

Lead Organizer, NASA SWOT User Workshop titled "*Engaging the User Community for Advancing Societal Application of Surface Water Ocean Topography (SWOT) mission*" held in USGS HQ, Reston (VA), from April 5-6, 2017.

Lead Organizer, NASA Decadal Survey E2 Workshop titled "*Globalizing Societal Application of Scientific Research and Observations from Remote Sensing: The Path Forward*" held in Tacoma Holiday Inn from June 22-25, 2015.

External Promotion Evaluator – Aalto University, Finland, 2024

External PhD Thesis Examiner – University of Melbourne, Australia, 2018, 2019

External PhD Dissertation Committee member– University of Sherbrooke, Canada, 2016

NASA ROSES review panelist for Interdisciplinary Sciences and Water program, 2015-2016.

Lead Organizer, UW Student Film Contest, Spring 2017-present

Director of Student Recruitment Video for Hydrology and Hydrodynamics group of Civil and Environmental Engineering at UW. [watch online at: https://www.youtube.com/watch?v=-Kz-1M8mIzw], 2014.

Book review on "*Water Diplomacy: A Negotiated Approach to Managing Complex Water Networks*" by S. Islam and L.E. Susskind (RFF Press) – Review appeared in *EOS* (American Geophysical Union), 2013.

Lead and invited author in 2009 of chapter titled '*Reservoirs, Transboundary Issues and Human Impacts*' for Mission Science Document of the proposed NASA-CNES Surface Water and Ocean Topography (SWOT) Mission (launch date 2021).

Coordinator and lead organizer of CEE 1020 Student Film Contest, 2007-2009.