

CURRICULUM VITAE

Rocky Talchabhadel

Assistant Professor

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Education

- ☐ Ph.D. in Engineering, Department of Civil and Earth Resources Engineering, Kyoto University, Japan (2017)
- ☐ Master of Science in Water Resources Engineering, Tribhuvan University, Nepal (Distinction, 2012)
- ☐ Bachelor's degree in Civil Engineering, Tribhuvan University, Nepal (Distinction, 2010)
- ☐ Higher secondary level, Nobel Academy, Nepal (Distinction, 2005)
- ☐ Secondary level, Golden Gate English Secondary School, Nepal (Distinction, 2003)

Achievements

- ☐ **AGU Faculty Travel Grant** to support attendance at AGU Fall Meeting 2025, New Orleans LA, Dec 15-19, 2025
- ☐ **AGU-Chapman 2025 Travel Grant** to support attendance at Chapman Conference on Particle Precipitation: Drivers, Properties, and Impacts on Atmosphere, Ionosphere, Magnetosphere Coupling, Melbourne, Australia, Feb 14-21, 2025.
- ☐ **AGU Faculty Travel Grant** to support attendance at AGU Fall Meeting 2024, Washington DC, Dec 09-13, 2024
- ☐ Jackson State University (JSU) **Faculty Research Travel Grant** [Fall 2024]
- ☐ Jackson State University (JSU) **Seed Grant** Recipient [Summer 2024]
- ☐ **HydroLearn CIROH Summer Hackathon and Workshop Travel Grant** to support attendance at 2024 CIROH Developers Conference (DevCon24), Salt Lake City, UT, May 29- June 1, 2024.
- ☐ **NSF Primary Travel Award** to support attendance at Natural Hazards Research Summit, May 14-15, College Park, MD, 2024.
- ☐ Jackson State University (JSU) **Spring Break Extreme Program** Recipient [Spring 2024]
- ☐ **AGU-Chapman 2024 Travel Grant** to support attendance at Chapman Conference on Remote Sensing of the Water Cycle, Honolulu, HI, Feb 13-16, 2024.
- ☐ **Mentoring Institute for Sediment Transport Researchers (MIST) Mentee 2023-2024:** Travel funds for attending the 2023 AGU Fall Meeting
- ☐ **CUAHSI 2023 Travel Grant** to support attendance at 2023 CUAHSI Biennial

Colloquium, Granlibakken Resort, Tahoe City, CA, June 11 - 14, 2023.

- ☐ **Finalist**, AIM for Climate Grand Challenge: Leveraging the Power of AI and Machine-Learning, Washington D.C., May 08 - 10, 2023. [Ideas proposed: Earth Observations to Decision-making (EO2DM) for sustainable agriculture and water, employing Bayesian modeling]
- ☐ **LAND 2022 Travel Grant** to support attendance at 2022 World Environmental and Water Resources Congress, Atlanta, GA, June 05 - 08, 2022.
- ☐ Japan Society for the Promotion of Science (JSPS) **Travel Grant**, AGU Fall Meeting 2019, San Francisco, USA, December 2019.
- ☐ Japan Society for the Promotion of Science (JSPS) **Travel Grant**, 38th IAHR World Congress, Panama City, Panama, September 2019.
- ☐ Japan Society for the Promotion of Science (JSPS) **Postdoctoral Fellowship** in Disaster Prevention Research Institute, Kyoto University, Kyoto, Japan, 2019-2020.
- ☐ Kyoto University **Travel Grant**, 7th International Conference on Water and Flood Management, Dhaka, Bangladesh, March 2019.
- ☐ Kyoto University **Travel Grant**, 9th International Conference on Fluvial Hydraulics, River Flow, Lyon, France, September 2018.
- ☐ Kyoto University **Travel Grant**, 2nd International Conference on Sustainable Development, Dhaka, Bangladesh, February 2018
- ☐ Kyoto University **Travel Grant**, 7th International Conference on Flood Management (ICFM7), Leeds, UK, September 2017.
- ☐ Kyoto University **Travel Grant**, 37th IAHR World Congress, Kuala Lumpur, Malaysia, August 2017.
- ☐ National Science and Technology for Disaster Reduction **Travel Grant**, International Training Workshop, Taipei, Taiwan, September 2016.
- ☐ Japanese Government Scholarship (**Monbukagakusho Scholarship**) for Ph.D. Program in Kyoto University, Kyoto, Japan, 2014 – 2017.
- ☐ China Meteorological Administration (CMA) **Travel Grant**, International Training Course, Beijing, China, September 2014.
- ☐ World Meteorological Organization (WMO) **Travel Grant**, World Weather Open Science Conference, Montreal, Canada, August 2014.
- ☐ Netherlands Fellowship Programmes (NFP) **NUFFIC Short Course Fellowship**, IHE Delft Institute for Water Education, Delft, The Netherlands, March 2014
- ☐ **Merit Scholarship and excellent Academic Result** in MSc. Water Resources Engineering, Pulchowk Campus, Nepal, 2010 - 2012
- ☐ **Merit Scholarship and excellent Academic Result** in BE Civil Engineering, Pulchowk Campus, Nepal, 2005 - 2010
- ☐ **1st Runner up in National Civil Model Competition** organized by CESS-Nepal, Pulchowk Campus (Model of Koshi Embankment Breach-2008), Nepal.
- ☐ **Excellent Academic Result in Higher Secondary Level**, Nobel Academy, Nepal, 2003 - 2005
- ☐ **First Position in School Leaving Certificate (10th Grade)**, Golden Gate English Secondary School, Nepal, 2003
- ☐ **First Position in School (Grade Nursery to 10)**, Golden Gate English Secondary School, Nepal

Professional Organization Membership

General Member

- American Geophysical Union (AGU)
- European Geophysical Union (EGU)

Task Committee Member

- American Society of Civil Engineering (ASCE) Remote Sensing Applications for TMDL Modeling, ML/AI Task Committee, Sedimentation Committee and Curve Number (CN) Hydrology Committee
- JSU Artificial Intelligence (AI) Infusion Committee, JSU Faculty Representative: Mississippi Engineering Society (MES), JSU Property Management Representative

Teaching**Fall 2025**

- Advanced Water Resources Engineering (CIV 465)
- Engineering Hydrology (CIV 550)
- Advanced Topics in Water Resources Engineering (CIV 659)

Spring 2025

- Fluid Mechanics Lab (CIVL 330)
- Water Resources Engineering (CIV 370)
- Advanced Fluid Mechanics (CIV 551)
- Hydraulic Engineering Design (CIV 652)

Fall 2024

- Fluid Mechanics (CIV 330)
- GIS Applications in Civil and Environmental Engineering (CIV 552)

Spring 2024

- Fluid Mechanics Lab (CIVL 330)
- Engineering Hydrology (CIV 550)

Fall 2023

- Fluid Mechanics (CIV 330)

Thesis Supervision

- Mr. Saurav Bhattarai [2025 Spring Graduation: MS. Civil Engineering (Water Resources Track), Jackson State University, USA]
- Mr. Aashish Ganesh [2025 Graduation: MSc. Water Resources Engineering, Tribhuvan University, Nepal]
- Mr. Nischal Shrestha [2025 Graduation: MSc. Water Resources Engineering, Tribhuvan University, Nepal]
- Mr. Manoj Budhatkhai [2025 Graduation: MSc. Water Resources Engineering, Tribhuvan University, Nepal]
- Mr. Nitesh Sharma [2023 Graduation: MSc. Water Resources Engineering, Tribhuvan University, Nepal]
- Mr. Subash Dhakal [2023 Graduation: MSc. Hydropower Engineering, Tribhuvan University, Nepal]
- Mr. Sabin Dangol [2022 Graduation: MSc. Hydropower Engineering, Tribhuvan University,

Nepal]

Thesis/Dissertation Committee

- Mr. Rajaram Prajapati [2025 Graduation: Ph.D, Department of Geology, University of Pittsburgh, USA]
- Mr. Insaf Aryal [2025 Spring Graduation: MSc. Water Engineering and Management, Asian Institute of Technology, Thailand]
- Ms. Pujan Neupane [2021 Graduation: MSc. Water Resources Engineering, Tribhuvan University, Nepal]

Professional Involvement

- ☐ **Instructor:** Technical Workshop: Remote Sensing for Water Resources and Water Quality Modeling Application - TMDL, World Environmental and Water Resources Congress 2025, Anchorage, AK, May 18, 2025.
- ☐ **Convener:** Hydroclimatic Modeling, Analyses, and Projections: Challenges and Opportunities (Oral and Poster sessions), AGU Fall Meeting 2024, Washington DC, USA, Dec 9-13, 2024
- ☐ **Convener:** Coastal Storm Risk Modeling and Analysis Via Cloud Computing (Poster session), AGU Fall Meeting 2024, Washington DC, USA, Dec 9-13, 2024
- ☐ **Convener:** Hydroclimatic Disasters in Data-Scarce Regions: Interfacing Science and Policy (Poster session), AGU Fall Meeting 2023, San Francisco, CA, USA, Dec 11-15, 2023
- ☐ **Moderator/Instructor:** Technical Workshop: Remote Sensing for Water Resources Modeling Application - TMDL, World Environmental and Water Resources Congress 2023, Henderson, NV, May 22, 2023.
- ☐ **Moderator/Instructor:** Technical Workshop: Modeling for Water Management in a Changing World, World Environmental and Water Resources Congress 2023, Henderson, NV, May 21, 2023.
- ☐ **Convener:** Hydroclimatic Modeling, Analyses, and Projections: Challenges and Opportunities (Oral and Poster sessions), AGU Fall Meeting 2022, Chicago, IL, USA, Dec 12 – 16, 2022.
- ☐ **Guest Editor:** Frontiers in Water Special Issue 2022, “Advancements in Transboundary Water Management”
- ☐ **Guest Editor:** Atmosphere Special Issue 2022, “Application of Satellite-Based Precipitation Estimates Using Machine Learning and Numerical Modeling”
- ☐ **Moderator/Instructor:** Technical Workshop: Remote Sensing for Water Quality Applications, 2022 World Environmental and Water Resources Congress, Atlanta, GA, June 05, 2022.
- ☐ **Convener:** Hydroclimatic Modeling, Analyses, and Projections: Challenges and Opportunities (Oral and Poster sessions), AGU Fall Meeting 2021, New Orleans, LA, USA, Dec 13 – 17, 2021.
- ☐ **Guest Editor:** Atmosphere Special Issue 2021, Satellites Applied in Extreme Weather and Their Atmospheric Mechanisms

Project proposals

Awarded [Ongoing: \$ 1.4 million]

- ☐ **Principal Investigator** in USDOT Program: University Transportation Centers MarTREC Project for 2025-2026: “Improved Road Flood Predictability and Disruption Response Through the Synergistic Integration of Geospatial Databases, Process-Based Modeling, and Machine Learning”, [\$77,500.00]
- ☐ **Principal Investigator** in US Army ERDC “Hydrological Impacts Computing, Outreach, and Resiliency Partnership (HICORPS) Project” Sub-Contracted through Woolpert-Taylor (2023 - 2026) [\$1,375,939.90]
- ☐ **Principal Investigator** (Jackson State University) sub-Contracted through Arizona State University in NASA Land-cover land use change (LCLUC) 2022: Exploring the Nexus between LCLUC, Socio-Economic Factors, and Water for a Vulnerable Arid US-Mexico Transboundary Region (2023-2025) [\$83,211.00]

Completed [\$41K]

- ☐ **Principal Investigator** in **Microsoft-AUC Mini-Grants program** for 2024-2025: “Climate Change Impact Assessment Training for Undergraduate Students: Leveraging Planetary-Scale Data and Cloud”, [\$18,000.00]
- ☐ **Principal Investigator** in Jackson State University (**JSU**) **Seed Grant** [Summer 2024]: A comprehensive data-model integration framework for advancing predictive understanding of compound coastal heatwave and flooding [\$5,000.00]
- ☐ **Principal Investigator** in Jackson State University (**JSU**) **Spring Break Extreme Initiative** [Spring 2024]: Urban Cooling Strategies for Mitigating Heat Exposure to Enhance Community Resilience [\$3,200.00]
- ☐ **Principal Investigator** in Coalition for Disaster Resilient Infrastructure (CDRI) Fellowship 2023-24: Urban cooling to mitigate heat exposure in Nepalese cities: Geospatial assessment of green roof, urban parks and wetlands [\$15,000.00]

During my period with Texas A&M System

- ☐ **Institutional Lead** (Texas A&M AgriLife Research) in Multi-State Hatch project entitled S1089: Advanced understanding and prediction of pollutants in critical landscapes in watershed (2022-2025)
- ☐ **Co-Investigator** in U.S. Dept of Interior-USGS Project 2022: Border Water Resources: The Role of Groundwater in Creating Resiliency and Water Security. Transboundary Aquifer Assessment Program-5 Year Strategic Plan-Texas (2022 – 2027) [Awarded]
- ☐ **Co-Investigator** in Interior-USDA Project: Dryland and Irrigated Crop Management Under Limited Water Availability and Drought (2022-2025)

Publication

First-authored

1. **Talchabhadel, R.**, Rhodes, E.C., Palmate, S.S., Kumar, S., 2025. Evaluating Vegetation Greening and Browning across the Rio Grande Basin. Earth Syst Environ. <https://doi.org/10.1007/s41748-025-00756-2>
2. **Talchabhadel, R.**, Panthi, J., Pandey, V.P., Rakhal, B., Ghimire, G.R., Bista, S., Bhattarai, S., Poudel, S., Bhattarai, Y., Prajapati, R., Thapa, B.R., Nepal, B., Sharma, S., 2025. Yesterday's extremes, today's new normal: flood risk in the Kathmandu Valley,

- Nepal. *Nat Hazards*. <https://doi.org/10.1007/s11069-025-07524-5>
3. **Talchabhadel, R.**, Bhattarai, S., Bista, S., 2024. Projected Changes in Precipitation Extremes Across the Mississippi River Basin Using the NASA Global Daily Downscaled Datasets NEX - GDDP - CMIP6. *Intl Journal of Climatology* joc.8748. <https://doi.org/10.1002/joc.8748>
 4. **Talchabhadel, R.**, Chhetri, R. 2023. Evaluation of long-term changes in water balances in the Nepal Himalayas. *Theor. Appl. Climatol.* <https://doi.org/10.1007/s00704-023-04646-3>
 5. **Talchabhadel, R.**, Maskey, S., Gouli, M.R., Dahal, K., Thapa, A., Sharma, S., Dixit, A.M., Kumar, S. 2022. Multimodal multiscale characterization of cascading hazard on mountain terrain. *Geomatics, Nat. Hazards Risk*. <https://doi.org/10.1080/19475705.2022.2162443>
 6. **Talchabhadel, R.**, Shah, S., Aryal, B., 2022. Evaluation of the Spatiotemporal Distribution of Precipitation Using 28 Precipitation Indices and 4 IMERG Datasets over Nepal. *Remote Sens.* 14, 5954. <https://doi.org/10.3390/rs14235954>
 7. **Talchabhadel, R.**, Sharma, S., Khadka, N., Hamal, K., Karki, S., Thapa, B.R. 2022. An outlook on the applicability of satellite precipitation products for monitoring extreme precipitation events in Nepal Himalaya. *Weather* <https://doi.org/10.1002/wea.4143>
 8. **Talchabhadel, R.**, McMillan H., Palmate, S.S., Sanchez, R., Sheng, Z., Kumar, S. 2021. Current Status and Future Directions in Modeling a transboundary aquifer: a case study of Hueco Bolson, *Water*, 13(22), 3178. <https://doi.org/10.3390/w13223178>
 9. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Yamanoi, K., Musumari, H., Adhikari, T.R., Prajapati, R. 2021. Appraising the Potential of Using Satellite-based Rainfall Estimates for Evaluating Extreme Precipitation: A Case Study of August 2014 Event across the West Rapti River Basin, Nepal. *Earth Sp. Sci.* 8(8), e2020EA001518. <https://doi.org/10.1029/2020EA001518> [Editor highlight]
 10. **Talchabhadel, R.**, Ghimire, G.R., Sharma, S., Dahal, P., Panthi, J., Baniya, R., Pudashine, J., Thapa, B.R., PC, S., Parajuli, B., 2021. Weather Radar in Nepal: Opportunities and Challenges in a Mountainous Region. *Weather*, wea.3994. <https://doi.org/10.1002/wea.3994>
 11. **Talchabhadel, R.**, 2021. Observations and climate models confirm precipitation pattern is changing over Nepal. *Jalawaayu*, 1, 1. <https://doi.org/10.3126/jalawaayu.v1i1.36448>
 12. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Yamanoi, K., Thapa, B.R., 2021. Assessment of vertical accuracy of open source 30m resolution space-borne Digital Elevation Models. *Geomatics, Nat. Hazards Risk* 12, 1, 939-960. <https://doi.org/10.1080/19475705.2021.1910575>
 13. **Talchabhadel, R.**, Panthi, J., Sharma, S., Ghimire, G.R., Baniya, R., Dahal, P., Baniya, M.B., K.C., S., Jha, B., Kaini, S., Dahal, K., Gnyawali, K.R., Parajuli, B., Kumar, S., 2021. Insights on the Impacts of Hydroclimatic Extremes and Anthropogenic Activities on Sediment Yield of a River Basin. *Earth* 2, 32–50. <https://doi.org/10.3390/earth2010003>
 14. **Talchabhadel, R.**, Aryal, A., Kawaike, K., Yamanoi, K., Nakagawa, H., Bhatta, B., Karki, S., Thapa, B.R., 2021. Evaluation of precipitation elasticity using precipitation data from ground and satellite-based estimates and watershed modeling in Western Nepal. *J. Hydrol. Reg. Stud.* 33, 100768. <https://doi.org/10.1016/j.ejrh.2020.100768>
 15. **Talchabhadel, R.**, Aryal, A., Kawaike, K., Yamanoi, K., Nakagawa, H., 2021. A comprehensive analysis of projected changes of extreme precipitation indices in West Rapti River basin, Nepal under changing climate. *Int. J. Climatol.* 41. <https://doi.org/10.1002/joc.6866>
 16. **Talchabhadel, R.**, Karki, S., Baniya, M.B., 2020. Streamflow Variations across Nepal during 1986-2015. *Tech. J.* 2, 126–134. <https://doi.org/10.3126/tj.v2i1.32849>
 17. **Talchabhadel, R.**, Thapa, B.R., Sheng, Z., 2020. Sensitivity analysis of groundwater

- parameters of SWAT model. *Bull. Nepal Hydrogeol. Assoc.* 5, 1–9. [Click](#)
18. **Talchabhadel, R.**, Prajapati, R., Aryal, A., Maharjan, M., 2020. Assessment of rainfall erosivity (R-factor) during 1986–2015 across Nepal: a step towards soil loss estimation. *Environ. Monit. Assess.* 192, 293. <https://doi.org/10.1007/s10661-020-8239-9>
 19. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Prajapati, R., 2020. Evaluating the rainfall erosivity (R-factor) from daily rainfall data: an application for assessing climate change impact on soil loss in Westrapti River basin, Nepal. *Model. Earth Syst. Environ.* 6, 1741–1762. <https://doi.org/10.1007/s40808-020-00787-w>
 20. **Talchabhadel, R.**, Nakagawa, H., Kawaike, Kenji, Yamanoi, K., Aryal, A., 2019. Future assessment of rainfall erosivity (R-factor) in West Rapti Basin, Nepal, based on RUSLE and CMIP5 climate models. *J. Japan Soc. Civ. Eng. Ser. B1 (Hydraulic Eng.)* 75, I_1141-I_1146. https://doi.org/10.2208/jscejhe.75.2_I_1141
 21. **Talchabhadel, R.**, Karki, R., 2019. Assessing climate boundary shifting under climate change scenarios across Nepal. *Environ. Monit. Assess.* 191, 520. <https://doi.org/10.1007/s10661-019-7644-4>
 22. **Talchabhadel, R.**, Karki, R., Yadav, M., Maharjan, M., Aryal, A., Thapa, B.R., 2019. Spatial distribution of soil moisture index across Nepal: a step towards sharing climatic information for agricultural sector. *Theor. Appl. Climatol.* 137, 3089–3102. <https://doi.org/10.1007/s00704-019-02801-3>
 23. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., 2018. Spatial and temporal variability of precipitation in southwestern Bangladesh. *J. Japanese Soc. Civ. Eng. Ser B1 (Hydraulic Eng.)* 74, 289–294. https://doi.org/10.2208/jscejhe.74.5_I_289
 24. **Talchabhadel, R.**, Karki, R., Thapa, B.R., Maharjan, M., Parajuli, B., 2018. Spatio-temporal variability of extreme precipitation in Nepal. *Int. J. Climatol.* 38, 4296–4313. <https://doi.org/10.1002/joc.5669>
 25. **Talchabhadel, R.**, Ota, K., Nakagawa, H., Kawaike, K., 2018. Three-dimensional simulation of flow and sediment transport processes in tidal basin. *J. Japan Soc. Civ. Eng. Ser. B1 (Hydraulic Eng.)* 74, I_955-I_960. https://doi.org/10.2208/jscejhe.74.I_955
 26. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Hashimoto, M., Sahboun, N., 2017. Experimental investigation on opening size of tidal basin management: A case study in southwestern Bangladesh. *J. Japan Soc. Civ. Eng. Ser. B1 (Hydraulic Eng.)* 73, I_781-I_786. https://doi.org/10.2208/jscejhe.73.I_781
 27. **Talchabhadel, R.**, Karki, R., Parajuli, B., 2017. Intercomparison of precipitation measured between automatic and manual precipitation gauge in Nepal. *Measurement* 106, 264–273. <https://doi.org/10.1016/j.measurement.2016.06.047>
 28. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., 2016. Experimental study on suspended sediment transport to represent Tidal Basin Management. *J. Japan Soc. Civ. Eng. Ser. B1 (Hydraulic Eng.)* 72, I_847-I_852. https://doi.org/10.2208/jscejhe.72.I_847

Co-authored

1. Ebrahimi, S., Khorram, M., Neri Barranco, R., Sanchez, R., **Talchabhadel, R.**, Palmate, S.S., Dominguez-Tuda, M., Racine, E.F., Kumar, S., 2025. 30 Years of simultaneous crop & land cover land use maps for Middle Rio Grande from 1994 to 2024. *Sci Data* 12, 1462. <https://doi.org/10.1038/s41597-025-05771-6>
2. Pudasainee, S., Acharya, R.H., **Talchabhadel, R.**, Shrestha, D., Dawadi, B., 2025. Investigation of meteorological condition during the air dynasty helicopter crash-2019 in Nepal using the WRF model. *Nat Hazards*. <https://doi.org/10.1007/s11069-025-07553-0>
3. Mustafa, Z., Barnes, L., **Talchabhadel, R.**, 2025. Effects of the Bonnet Carré Spillway Openings on the Mississippi Sound. *OJCE* 15, 300–313. <https://doi.org/10.4236/ojce.2025.152016>

4. Bhattarai, S., Banjara, P., Pandey, V.P., Aryal, A., Pradhan, P., Al-Douri, F., Pradhan, N.R., **Talchabhadel, R.**, 2025. Quantifying the cooling effects of blue-green spaces across urban landscapes: A case study of Kathmandu Valley, Nepal. *Urban Climate* 61, 102493. <https://doi.org/10.1016/j.uclim.2025.102493>
5. Ouadja, A., Zerouali, B., Flanagan, D.C., Porto, P., Benfetta, H., Farsi, F.Z., Ghosal, K., **Talchabhadel, R.**, Santos, C., 2025. Using empirical methods, GIS and bathymetric survey for assessing the siltation of Sidi-Yacoub Dam (northwestern Algeria). *Geofizika* 42. <https://doi.org/10.15233/gfz.2025.42.5>
6. Bhattarai, S., Bokati, L., Sharma, S., **Talchabhadel, R.**, 2025. Understanding spatiotemporal variation of heatwave projections across US cities. *Sci Rep* 15, 10643. <https://doi.org/10.1038/s41598-025-95097-5>
7. Bonta, J., Chin, D.A., Johnson, M.S., Miller, J.J., Minervini, W., Ramirez-Avila, J., Moglen, G., Neelam, T.J., Oliveira, P.T.S., Sharma, S., **Talchabhadel, R.**, Tollner, E.W., Walter, M.T., Ward, T., Woodward, D.E., 2025. The Curve Number's Initial Abstraction and Physical Hydrology: ASCE-EWRI CN Hydrology Committee Synthesis. *J. Irrig. Drain Eng.* 151, 06025002. <https://doi.org/10.1061/JIDEDH.IRENG-10449>
8. Bokati, L., Somenahally, A., Kumar, S., Robatjazi, J., **Talchabhadel, R.**, Sarkar, R., Perepi, R., 2025. Temporal adjustment approach for high-resolution continental scale modeling of soil organic carbon. *Sci Rep* 15, 6483. <https://doi.org/10.1038/s41598-025-89503-1>
9. Gouli, M.R., Hu, K., Khadka, N., Liu, S., Yifan, S., Adhikari, M., **Talchabhadel, R.**, 2025. Quantitative assessment of the GLOF risk along China-Nepal transboundary basins by integrating remote sensing, machine learning, and hydrodynamic model. *International Journal of Disaster Risk Reduction* 118, 105231. <https://doi.org/10.1016/j.ijdrr.2025.105231>
10. Dahal, K., **Talchabhadel, R.**, Pradhan, P., Parajuli, S., Shrestha, D., Chhetri, R., Gautam, A.P., Tamrakar, R., Gurung, S., Kumar, S., 2025. Nepal's carbon stock and biodiversity are under threat from climate change exacerbated forest fires. *Information Geography* 100003. <https://doi.org/10.1016/j.infgeo.2025.100003>
11. Bhattarai, Y., Bista, S., **Talchabhadel, R.**, Duwal, S., Sharma, S., 2024. Rapid prediction of urban flooding at street-scale using physics-informed machine learning-based surrogate modeling. *Total Environment Advances* 12, 200116. <https://doi.org/10.1016/j.teadva.2024.200116>
12. Bhattarai, S., Bista, S., Sharma, S., White, L.D., Amini, F., **Talchabhadel, R.**, 2024. Spatiotemporal characterization of heatwave exposure across historically vulnerable communities. *Sci. Rep.* 14, 20882. <https://doi.org/10.1038/s41598-024-71704-9>
13. Bhattarai, S., **Talchabhadel, R.**, 2024. Comparative Analysis of Satellite-based Precipitation Data across the CONUS and Hawaii: Identifying Optimal Satellite Performance, *Remote Sensing* <https://doi.org/10.3390/rs16163058>
14. Rahimi, L., Hoque, M., Ahmadisharaf, E., Alamdari, N., Misra, V., Maran, A.C., Kao, S., Aghakouchak, A., **Talchabhadel, R.**, 2024. Future climate projections for South Florida: Improving Accuracy of Air Temperature and Precipitation Extremes with a Hybrid Statistical Bias Correction Technique, *Earth's Future*
15. Prajapati, R., Gardner, J., Pavelsky, T., **Talchabhadel, R.**, 2024. Longitudinal Recovery of Suspended Sediment Downstream of Large Dams in the US. *Water Resour. Res.* 60, e2023WR036759. <https://doi.org/10.1029/2023WR036759>
16. Adhikari, T.R., Baniya, B., Tang, Q., Chen, D., **Talchabhadel, R.**, Li, H., Shrestha, S., Sigdel, M., Budhathoki, B.R., Pradhanang, S.M., Pradhananga, D., Awasthi, R.P., 2024. Identification precipitation threshold and resulting river discharge: An IDF-based approach in the Central Himalaya, *Nepal Geografiska Annaler: Series A, Physical Geography* <https://doi.org/10.1080/04353676.2024.2373575>

17. Banjara, P., Bhattarai, S., Pandey, V.P., **Talchabhadel, R.**, 2024. Spatiotemporal characterization of heatwaves on an urban center using satellite-based estimates. *Theor. Appl. Climatol.* <https://doi.org/10.1007/s00704-024-05026-1>
18. Bista, S., Baniya, R., Sharma, S., Ghimire, G.R., Panthi, J., Prajapati, R., Raj Thapa, B., **Talchabhadel, R.**, 2024. Hydrologic applicability of satellite-based precipitation estimates for irrigation water management in the data-scarce region. *J. Hydrol.* 636, 131310. <https://doi.org/10.1016/j.jhydrol.2024.131310>
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Book chapters

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Lead \ Keynote Presentation

1. **Talchabhadel, R.**: Utilizing Ground- and Satellite-Based Data for Informed Engineering Designs in a Changing Climate, Sustainable Construction Technology and Management: Challenges and Opportunities, Chitwan, Nepal, Sep 22, 2024.
2. **Talchabhadel, R.** and Dahal, K.: Remote Sensing, Big Data Analytics, and Cloud Computing: Application to Water Quality Modeling, Technical Workshop: Remote Sensing for Water Resources Modeling Application - TMDL, World Environmental and Water Resources Congress 2023, Henderson, NV, May 22, 2023.
3. **Talchabhadel, R.**: Exploring the World with Programmatic tools, Technical Workshop: Modeling for Water Management in a Changing World, World Environmental and Water Resources Congress 2023, Henderson, NV, May 21, 2023.
4. **Talchabhadel, R.**: Facilitating Water Research and Training in Nepal, 14th international NeSA conference organized by the Nepalese Student Association, New Mexico State University, Las Cruces, NM, USA, March 18, 2023.
5. Thapa, B.R. and **Talchabhadel, R.**: Understanding Complex Cascading and Compounding impacts of Natural Hazards, GeoMandu 2023, Kathmandu, Nepal, March 16-17, 2023.
6. **Talchabhadel, R.**: Interactive talk on Google Earth Engine: Power of Data and Compute Together, Technical Workshop: Remote Sensing for Water Quality Applications, World Environmental and Water Resources Congress 2022, Atlanta, GA, Jun 4, 2022.
7. **Talchabhadel, R.**: Guest lecture on Google Earth Engine at the University of Texas at El Paso (UTEP), El Paso, TX, Nov 02, 2021.
8. **Talchabhadel, R.**: Understanding precipitation variability using ground- and satellite-based products, and under changing climate, MSc. Water Resource Engineering, Tribhuvan University, Nepal [Online], Dec 18, 2020.
9. **Talchabhadel, R.**: Projected impacts of climate change on Soil Erosion across Nepal, sixth Graduate Conference- Nepal, Himalayan Knowledge Conclave, Nepal [Online], Aug 05-06, 2020.

10. **Talchabhadel, R.:** How safe are we from rain waters? Smartphones For Water- Nepal, Nepal [Online], July 11, 2020.
11. **Talchabhadel, R.,** Nakagawa, H., Kawaike, K., Yamanoi, K., Prajapati, R.: Evaluating the impact of land use land cover change on soil loss and sediment delivery ratio across the West Rapti River basin, Nepal, GEA International Conference, Montenegro [Online], May 28-31, 2020.

Conference paper/abstract

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1. Baniya, M.B., Karki Baniya, T., Baniya, A., **Talchabhadel, R.,** Bhandari, L.P., Pokhrel, A., Subedi, S., Subedi, D.: Components of Road Transport Infrastructure Development in Kaski District, Gandaki Province, Nepal, in: International Conference on Transportation and Development 2025, American Society of Civil Engineers, Glendale, Arizona, pp. 1–7. <https://doi.org/10.1061/9780784486191.001>
2. Bista, S., Lu, D., **Talchabhadel, R.:** Projecting Compound Flood Risk to the Coastal Cities, 2025 World Environmental & Water Resources Congress, Anchorage, AK, May 18 – 21, 2025
3. **Talchabhadel, R.,** Bhattarai, S., Poudel, S., Bista, S., Kafoury, R. : Projecting Extreme Temperatures and Precipitation for the Gulf Coast Region of the United States, 2025 World Environmental & Water Resources Congress, Anchorage, AK, May 18 – 21, 2025
4. Poudel, S., Bista, S., **Talchabhadel, R.:** Mapping Multi-hazards in Coastal Cities Using Geospatial Techniques, 2025 World Environmental & Water Resources Congress, Anchorage, AK, May 18 – 21, 2025
5. Bhattarai, S., **Talchabhadel, R.:** Evaluating the Compound Effects of Precipitation and Storm Surge on Coastal Flooding Risk in the CONUS, 2025 World Environmental & Water Resources Congress, Anchorage, AK, May 18 – 21, 2025
6. Poudel, S., Bista, S., **Talchabhadel, R.:** Multi-Hazard Risk Assessment in CZMA Areas: A Geospatial Framework Integrating Future Climate Projections. <https://doi.org/10.5194/egusphere-egu25-14644>
7. Bhattarai, S., **Talchabhadel, R.:** Urban Heat Resilience: Projecting Heatwaves and Quantifying Cooling Strategies in 50 Major U.S. Cities. Presented at the 105th Annual AMS Meeting 2025, p. 452277.

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8. **Talchabhadel, R.,** Bhattarai, S., Banjara, P., and Pandey, V.P.: Urban Cooling Strategies: Evaluating the Effectiveness of Green Spaces and Water Bodies in Mitigating Heat Exposure in Kathmandu Valley, Nepal, AGU Fall Meeting, Washington, DC, Dec 09-13, 2024 [Poster Presentation]
9. Bista, S., **Talchabhadel, R.:** Sediment transport dynamics in lower Mississippi, AGU Fall Meeting, Washington, DC, Dec 09-13, 2024 [Poster Presentation]
10. **Talchabhadel, R.,** Bernard, D., Johnson, K., Bhattarai, S., Bista, S., Poudel, S., Kafoury, R.: Evaluation of Climate Change Projections Using Open-Source Software Infrastructure across the Gulf Coast of the United States, AGU Fall Meeting, Dec 09-13, 2024 [Poster Presentation]
11. Bhattarai, Y., Sharma, S., **Talchabhadel, R.:** Integrating green and gray infrastructure for sustainable management of urban flood risk AGU Fall Meeting, Washington, DC, Dec 09-13, 2024 [Oral Presentation]
12. Bista, S., Bhattarai, S., Sharma, S., **Talchabhadel, R.:** Implication of non-stationary climate dynamics for flood risk projections. AGU Fall Meeting, Washington, DC, Dec 3-31, 2024 [Online Poster Presentation].
13. Bhattarai, S., Sharma, S., **Talchabhadel, R.:** Detecting Multihazards in the United States

- Using Machine Learning: A Comparative Analysis of Individual and Compound Hazard Events, AGU Fall Meeting, Washington DC, Dec 9-13, 2024 [Poster Presentation]
14. Bhattarai, S., Byrd, A., **Talchabhadel, R.**: Evaluating the Compound Effects of Precipitation and Storm Surge on Coastal Flooding Risk in the CONUS: A Detailed Case Study of Galveston, AGU Fall Meeting, Washington DC, Dec 9-13, 2024 [Poster Presentation]
 15. Thapa, B. R., **Talchabhadel, R.**, Bhattarai, S.: Translating Multi-Hazard Risk Assessment to Compounding and Cascading Disaster Risk Management for Resilient Infrastructure, 2nd GeoMandu International Conference, Kathmandu, Nepal, Nov 28-29, 2024 [Invited Presentation]
 16. **Talchabhadel, R.**: Training Undergraduate Students to Evaluate Climate Change Projections Using Open-Source Software Infrastructure, Jackson State University Research Engagement Week, Jackson, MS, Oct 21-22, 2024 [Oral Presentation]
 17. Poudel, S., Bista, S., **Talchabhadel, R.**: Flood Vulnerability Index of US Coastal Cities and its use in Assessing Climate Change Impacts, Jackson State University Research Engagement Week, Jackson, MS, Oct 21-22, 2024 [Poster Presentation]
 18. Bhattarai, S., **Talchabhadel, R.**: Spatiotemporal Heatwave Characterization: Projecting Future Risks and Assessing Cooling Potential of Green and Blue Infrastructure in Urban Areas, Jackson State University Research Engagement Week, Jackson, MS, Oct 21-22, 2024 [Oral Presentation]
 19. Bista, S., Bhattarai, S., Poudel, S., **Talchabhadel, R.**: Challenges of Unprecedented Flood Risk Management, Jackson State University Research Engagement Week, Jackson, MS, Oct 21-22, 2024 [Oral Presentation]
 20. Thapa, B.R., **Talchabhadel, R.**, GC, E., Baral, T.R., Baral, S., Bhardwaj, D.: Mapping agricultural and resource shifts: Insights from Remote Sensing and Machine Learning, Water Security and Climate Change Conference 2024, Oct 09-11, 2024, GieBen, Germany. [Oral Presentation]
 21. Bhattarai, S., **Talchabhadel, R.**: Assessing Cascading and Compound Climate Extremes and Associated Vulnerabilities Across the United States; 3rd International Conference on Natural Hazards and Risks in a Changing World: Addressing Compound and Multi-Hazard Risk; 12-14 June, 2024; Amsterdam, Netherlands [Oral Presentation]
 22. Bista, S., Bhattarai, Y., Bhattarai, S., Sharma, S., **Talchabhadel, R.**, Amini, F: Urban Flood Inundation Prediction Under Climate Change, 2024 World Environmental & Water Resources Congress, Milwaukee, WI, May 19 – 22, 2024 [Oral Presentation]
 23. **Talchabhadel, R.**, Bhattarai, S., Bista, S., White, L., Amini, F: Providing undergraduate students with training on evaluating climate change projections within the framework of Open-source Software Infrastructure, 2024 World Environmental & Water Resources Congress, Milwaukee, WI, May 19 – 22, 2024 [Oral Presentation]
 24. Bhattarai, S., Sharma, S., **Talchabhadel, R.**: Assessing Multidimensional Climate Extremes and Associated Vulnerabilities Across the United States, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-20600, <https://doi.org/10.5194/egusphere-egu24-20600> [Oral Presentation]
 25. Sharma, S., Bhattarai, Y., Bista, S., **Talchabhadel, R.**: Leveraging machine learning and satellite observation for skillful flood forecasts, , EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-14019, <https://doi.org/10.5194/egusphere-egu24-14019> [Oral Presentation]
 26. **Talchabhadel, R.**, Bhattarai, S., Bista, S.: Empowering Undergraduate Students in Remote Sensing for Climate Change Projection Evaluation Using Open-Source Software Infrastructure, AGU Chapman Remote Sensing of the Water Cycle: Sensors to Science to Society, Honolulu, HI, Feb 13-16, 2024. [Poster Presentation]
 27. Bhattarai, S., **Talchabhadel, R.**: Heatwaves, Humidity, and the Water Cycle: A Remote

Sensing Perspective on Climate Transformation, AGU Chapman Remote Sensing of the Water Cycle: Sensors to Science to Society, Honolulu, HI, Feb 13-16, 2024. [Poster Presentation]

28. Bista, S., **Talchabhadel, R.**: Enhancing hydrological extreme monitoring and management through integration of remote sensing and hydrologic modeling, AGU Chapman Remote Sensing of the Water Cycle: Sensors to Science to Society, Honolulu, HI, Feb 13-16, 2024. [Poster Presentation]
29. Bokati, L., kumar, S., Perepi, R., Dahal, K., **Talchabhadel, R.**, Somenahally, A.: Predicting Soil Organic Carbon and Essential Soil Parameter's Using Remote Sensing: Implications on Regenerative Agriculture and Food Security, AGU Chapman Remote Sensing of the Water Cycle: Sensors to Science to Society, Honolulu, HI, Feb 13-16, 2024. [Poster Presentation]
30. Niu, Y., Shah, F., **Talchabhadel, R.**: Coping with Climate Change: A Study of Reservoir Capacity Optimization and Water Resource Management? Southern Agricultural Economics Association (SAEA) 56th Annual Meeting, Atlanta, GA, Feb 03-06, 2024 [Oral Presentation]
31. **Talchabhadel, R.**, Bhattarai, S., Banjara, P., Sharma, S. Projecting heatwave consequences in urban centers of the United States under changing climate, American Meteorological Society's 15th Conference on Environment and Health, 104th AMS Annual Meeting, Baltimore, MD, Jan 28 - Feb 1, 2024, [Oral Presentation]
32. Sharma, S., Bhattarai, Y., **Talchabhadel, R.**: Advancing Urban Flood Predictions Using Weather Ensemble, Machine Learning and Uncertainty Quantification. American Meteorological Society (AMS), Baltimore, MD, Jan 28 - Feb 1, 2024. [Poster Presentation]

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33. Bhattarai, S., Bokati, L., Sharma, S., **Talchabhadel, R.**: Assessing Heatwave Impacts and Enhancing Climate Resilience in Highly Populated US Cities, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Oral Presentation]
34. Bista, S., **Talchabhadel, R.**, Bhattarai, Y., Sharma, S., Amini, F.: Projecting flood inundation in the Lower Mississippi River, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
35. **Talchabhadel, R.**, Dahal, K., Bokati, L., Aryal, B., Thapa, A., Sharma, S.: Towards Open-source Software Infrastructure for Assessing Climate Change Projections, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
36. Bhattarai, Y., Duwal, S., **Talchabhadel, R.**, Sharma, S.: Flood Susceptibility Modeling and Uncertainty Quantification using Machine Learning, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
37. Bhattarai, Y., Bista, S., **Talchabhadel, R.**, Ghimire, G.R., Siddique, R., Sharma, S.: Understanding Infrastructure Resilience to Urban Flooding using Machine Learning, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
38. Dhakal, S., **Talchabhadel, R.**, Pandey, V.P.: Satellite Rainfall Insights: Unraveling spatiotemporal variability in the Mid-Hills of Nepal, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
39. Gouli, M.R., Hu, K., Khadka, N., **Talchabhadel, R.**: Integrated Hazard Assessment of Cascading Pair of Moraine Dammed Glacial Lakes in Nepal Himalaya, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
40. Kaini, S., **Talchabhadel, R.**, Bhandari, R.: Assessing the Need and Prioritizing Storage Hydropower Projects in Nepal, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
41. Thapa, B.R., Khatakho, R., **Talchabhadel, R.**: Unleashing the Power of Precipitation

Products: Advancing Hydrologic Modeling in Data-Scarce Regions through a case study of the Koshi River Basin, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]

42. Baniya, R., Bista, S., Lamsal, G.R., **Talchabhadel, R.**, Sharma, S., Panthi, J., Ghimire, G.R., Thapa, B.R.: Multi-objective reservoir operation to managing food, energy and water in a changing climate, AGU Fall Meeting, San Francisco, Dec 11-15, 2023 [Poster Presentation]
43. Sarkar, R., Bokati, L., Kumar, S., **Talchabhadel, R.**, Somenahally, A.: Unraveling the Soil Carbon Status of Soils in the United States Using Machine Learning Modeling. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO, Oct 29 - Nov 01, 2023 2023. [Poster Presentation]
<https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/151151>
44. Bokati, L., Kumar, S., **Talchabhadel, R.**, Somenahally, A.: Challenges in Modeling Soil Carbon Using Machine Learning from Legacy Data. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO, Oct 29 - Nov 01, 2023 2023. [Poster Presentation]
<https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/151289>
45. Bhattarai, S., Bista, S., **Talchabhadel, R.**: Projecting flood risk under climate change in Pearl River basin, Jackson State University Research Engagement Week, Jackson, MS, Oct 26, 2023 [Poster Presentation]
46. Bista, S., **Talchabhadel, R.**, Baniya, R.: Appraising the impact of climate change on irrigation water requirement, ground water recharge and crop yield in the rainfed river basin, World Climate Research Programme (WCRP) Open Science Conference, Kigali, Rwanda, Oct 23-27, 2023 [Oral Presentation]
47. **Talchabhadel, R.**: Modeling a Rio-Grande Hueco Bolson (RG-HB) Aquifer system: Current Status and Future Directions, 2023 CUAHSI Biennial Colloquium, Granlibakken Resort, Tahoe City, CA, June 11 - 14, 2023
48. **Talchabhadel, R.**, Palmate, S.P., Kumar, S.: Vegetation greening and browning trends in the Rio Grande – Rio Bravo basin from 2000 to 2020, World Environmental and Water Resources Congress 2023, Henderson, NV, May 21-24, 2023.
49. Dahal, K., Kumar, S., **Talchabhadel, R.**: Explainable Artificial Intelligence to visualize the unseen, World Environmental and Water Resources Congress 2023, Henderson, NV, May 21-24, 2023.
50. Rhodes, E.C., **Talchabhadel, R.**: Evaluating the change in the river channel path over five decades in the Navasota River basin, Texas, World Environmental and Water Resources Congress 2023, Henderson, NV, May 21-24, 2023.
51. Rhodes, E.C., **Talchabhadel, R.**: Forty-eight years of stream channel movement in the lower Navasota River Basin, Texas, North American Lake Management Society, 13th National Monitoring Conference, Virginia Beach, VA, Apr 24-28, 2023.

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52. **Talchabhadel, R.**, Kumar, S., Rhodes, E.C., Palmate, S.P., Racine, E.F.: A Bayesian belief Network (BN) approach to explore the nexus between land cover changes, socioeconomic factors, and hydroclimates, AGU Fall Meeting, Chicago, Dec 12-16, 2022
53. **Talchabhadel, R.**, Sharma, S., Prajapati, R., Kumar, S.: Nexus perspective on multiscale drivers of natural hazards, cascading failures, and risk management strategies within a multisector system, AGU Fall Meeting, Chicago, Dec 12-16, 2022
54. Kumar, S., **Talchabhadel, R.**: Using PlanetScope data for BMP Identification and Assessment, , AGU Fall Meeting, Chicago, Dec 12-16, 2022
55. Duwal, S., Shakya, B.M., Chalise, A., Lakhe, H., Silwal, P., Prajapati, R., **Talchabhadel, R.**: Evaluation of Citizen Science-Based Rainfall data with Standard Ground-Based Rain

Gauge and Remotely Sensed Rainfall data in the Kathmandu Valley, AGU Fall Meeting, Chicago, Dec 12-16, 2022

56. Baniya, R., **Talchabhadel, R.**, Sharma, S., Panthi, J., Ghimire, G.R., Regmi, R.K., Bista, S., Thapa, B.R., Prajapati, R., Pradhan, A.M.S.: Accounting Uncertainties is Crucial to Improving Multipurpose Reservoir Management, AGU Fall Meeting, Chicago, Dec 12-16, 2022
57. Bista, S., **Talchabhadel, R.**, Sharma, S., Ghimire, G.R., Panthi, J., Baniya, R., Prajapati, R., Thapa, B.R.: Multi-satellite Precipitation Estimates Can Improve Irrigation Water Decisions, AGU Fall Meeting, Chicago, Dec 12-16, 2022
58. **Talchabhadel, R.**, Kumar, S., Racine, E.F.: Exploring the nexus between land use land cover changes, socioeconomic factors, and water for a critically stressed arid US-Mexico transboundary region, Water Security and Climate Change Conference (WSCC2022), Bangkok, Dec 01-03, 2022
59. **Talchabhadel, R.**, Palmate, S.P., Mokari, E., Kumar, S. Evaluation of vegetation browning and greening trends in the Rio Grande – Rio Bravo basin from 2000 to 2021, The 22nd William T. Pecora Memorial Remote Sensing Symposium (PECORA 22), Denver, CO, Oct 23-28, 2022
60. Palmate, S.P., Kumar, S., **Talchabhadel, R.**, Mokari, E., A system dynamic approach for managing transboundary water systems, International Environmental Modelling & Software (iEMSS), Brussels, Belgium, July 04-08, 2022
61. **Talchabhadel R.**: Projection of future soil loss under changing climate across mid-hills in Nepal Himalaya, Workshop on soil erosion for the Europe – Emerging Challenges (online), June 20 – 22, 2022.
62. **Talchabhadel, R.**, Pradhan, P., Dahal, K., Rhodes, E.C., Kumar, S.: Projection of effects of warming temperatures, groundwater decline, and altered precipitation on crop productivity across the Ogallala Aquifer in Texas, World Environmental and Water Resources Congress 2022, Atlanta, GA, Jun 5-8, 2022.
63. **Talchabhadel, R.**, Sharma, S., Kumar, S.: Understanding multiscale drivers of natural hazards, cascading failures, and risk management strategies within a multisector system, EGU General Assembly 2022, Austria, May 23–27 May, EGU22-3029, 2022.
64. Baniya, R., Regmi, R. K., **Talchabhadel, R.**, Sharma, S., Panthi, J., Ghimire, G. R., Bista, S., and Thapa, B. R.: Hydrologic response to climate change: A case from a high-mountain river basin, EGU General Assembly 2022, Austria, May 23–27 2022, EGU22-503, 2022.
65. **Talchabhadel, R.**: Evaluating the Potential of Using Satellite-based Precipitation Estimates in the Himalayan River Basins of Nepal, Nepal Academics in America (NACA), Second Annual Virtual Conference, Apr 15 - 16, 2022.

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66. **Talchabhadel, R.**, McMillan H., Palmate, S.S., Sanchez, R., Sheng, Z., Kumar, S.: Current Status and Future Directions in Modeling a transboundary aquifer: a case study of Hueco Bolson, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
67. **Talchabhadel, R.**, Kumar, S., Sanchez, C.: Urban heating, thermal exposure, and heatwaves, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
68. Kumar, S., **Talchabhadel, R.**, Cheu, D.: BMP-Net: Deep-learning models to identify BMPs, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
69. Adhikari, T.R., **Talchabhadel, R.**, Sharma, S., Aryal, D., Pradhanang, S.M., Pradhananga, D., Awasthi, R.P.: Characterizing the hydrometeorology of 2021 Melamchi landslide dam-break flood, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
70. Dahal, K., Liu, G., Gnyawali, K.R., **Talchabhadel, R.**, Kumar, S.: Framework for

multi-hazards susceptibility assessment in Google Earth Engine, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.

71. Prajapati, R., **Talchabhadel, R.**, Gardner, J., Shrestha, S.: Sediment Transport in the Himalayan Rivers is Modulated by Hydroclimatic Variation, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
72. Baniya, R., **Talchabhadel, R.**, Panthi, J., Ghimire G.R., Sharma, S., Khadka, P., Maskey, R.K.: Enhancing Operational Flexibility of Integrated Nepalese Power System through Pumped-storage Hydropower, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
73. Duwal, S., Chalise, A., Prajapati, R., Silwal, S., Lakhe, H., **Talchabhadel, R.**: Citizen Scientists Measure Rainfall of Kathmandu Valley Comparable to Ground-Based Rain Gauge Observations and Satellite Rainfall Estimates, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
74. Silwal, P., Upadhyay, S., Duwal, S., Lakhe, H., Prajapati, R., **Talchabhadel, R.**: Evaluation and Comparison of Satellite Based-Rainfall Product and Ground Rain Gauge Observations over Five Basins of Nepal, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
75. Shah, S., Adhikari, A., Tiwari, A., **Talchabhadel, R.**: Seasonal drought index predictability for historical and future periods using Worldclim over the southern plain of Himalayan Tarai, AGU Fall Meeting 2021, USA, Dec 13 – 17, 2021.
76. Timilsina A., **Talchabhadel, R.**, Pandey, V.P. 2021. Rising Temperature Trends across the Narayani River Basin in Central Nepal Projected by CMIP6 Models. 10th IOE Graduate Conference, Kathmandu, Nepal
77. Thapa, B., Pandey, V.P., **Talchabhadel, R.** 2021. Assessing Future Precipitation in Gandaki River Basin based on CMIP6 Projections. 10th IOE Graduate Conference, Kathmandu, Nepal
78. **Talchabhadel, R.**, Dahal, K., Kumar, S.: Spatial downscaling of coarse resolution satellite-based precipitation estimates (SPEs) to 1 km using Machine Learning, The 3rd NOAA Workshop on Leveraging AI in Environmental Sciences, 13–17 September, USA [Online], 2021.
79. **Talchabhadel, R.**, Dahal, K., Kumar, S.: Machine Learning to Estimate Precipitation with Satellite-based and Gauged Observations, The 3rd NOAA Workshop on Leveraging AI in Environmental Sciences, 13–17 September, USA [Online], 2021.
80. **Talchabhadel, R.**, Prajapati, R., Davids, J.C.: Numerical simulation of urban inundation using citizen-based data: a case study of monsoon 2019 in Hanumante River Basin, Kathmandu valley, 8th International Conference on Flood Management (ICFM8), August, USA [Online], 2021.
81. Gnyawali, K.R., Tannant, D., Bhattarai, Y., Jayana, R., **Talchabhadel, R.**: Spatial and temporal dynamics of monsoon-induced landslides in Nepal in 2020, EGU Fall Meeting, Austria [Online], 2021.

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82. Baniya, R., **Talchabhadel, R.**, Sharma, S., Panthi, J., Ghimire, G.R., Dahal, P., Parajuli B.: Climate-informed decision-making for hydropower resilience in the central Himalayas, AGU Fall Meeting 2020, USA [Online], Dec 1 – 17, 2020.
83. Aryal, A., Maharjan, M., **Talchabhadel, R.**, Thapa, B.R.: Understanding the precipitation and temperature variability under changing climate in a Himalayan sub-basin, AGU Fall Meeting 2020, USA [Online], Dec 1 – 17, 2020.
84. Prajapati, R., **Talchabhadel, R.**, Silwal, P., Upadhyay, S., Ertis, B., Thapa, B.R., Davids, J.C.: Investigating the rainfall variability in the Kathmandu Valley, Nepal, AGU Fall Meeting 2020, USA [Online], Dec 1 – 17, 2020.

85. **Talchabhadel, R.**, Maharjan, M., Aryal, A., Thapa, B.R.: Observations and climate models confirm extreme precipitation events are happening more often and the magnitude increases significantly, AGU Fall Meeting 2020, USA [Online], Dec 1 – 17, 2020.
86. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Yamanoi, K., Musumari, H., Adhikari, T.R., Prajapati, R.: Numerical Simulation of Runoff Generation and Inundation Process of an Extreme Precipitation Event in Nepal, 22nd IAHR-APD Congress, Japan [Online], August, 2020.
87. Baniya, M.B., Asaeda, T., Fujino, T., **Talchabhadel, R.**, KC, S., Muhetaer, G.: Rainfall trend analysis and relationship with fluvial discharge and suspended sediment transport in Kali Gandaki River basin, Himalaya, Nepal, 22nd IAHR-APD Congress, Japan [Online], August, 2020.
88. Prajapati, R., Upadhyay, S., Silwal, P., **Talchabhadel, R.**, Davids, J.C., Khanal, A.: Citizen science-based urban flood monitoring in Hanumante River, Nepal, 10th International Conference on Fluvial Hydraulics (River Flow 2020), The Netherland [Online], July, 2020.
89. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Prajapati, R.: Numerical simulation of inundation process of a heavy precipitation event: A case study of August 2014 in West Rapti River basin, Nepal, 10th International Conference on Fluvial Hydraulics (River Flow 2020), The Netherland [Online], July, 2020.
90. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K., Yamanoi, K., Aryal, A., Bhatta, B., Karki, S.: SWAT modeling for assessing future scenarios of soil erosion in West Rapti River Basin of Nepal, EGU General Assembly, Austria [Online], May 4 – 8, 2020.
91. **Talchabhadel, R.**, Thapa, B.R.: Rainfall-runoff-inundation in a data-scarce flashy watershed: an application in Kandra River basin, Nepal, Fifth International Symposium on Flash Floods 2020, Japan, Feb 25 – 28, 2020.

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93. Prajapati, R., Danegulu, A., Manandhar, B., Upadhyay, S., Thapa, A.B., **Talchabhadel, R.**, Davids, J.C.: Stream-Aquifer Interactions in the Kathmandu Valley, Nepal, AGU Fall Meeting 2019, USA, Dec 9 – 14, 2019.
94. **Talchabhadel, R.**, Aryal, A., Maharjan, M., Prajapati, R., Nakagawa, H., Kawaike, K.: Anticipated impacts of climate change on rainfall erosivity over Nepal, 38th IAHR World Congress, Panama, Sep 01 - 06, 2019.
95. **Talchabhadel, R.**, Nakagawa, H., Kawaike, K.: Effects of DEM accuracy on sediment modeling results, 38th IAHR World Congress, Panama, Sep 01 - 06, 2019.

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96. **Talchabhadel, R.**, Thapa, B.R., Yadav, R., Baral, T., Prajapati, R.: Analysis of Rainfall-Runoff-Inundation in a data-scarce flashy watershed: an application in Kandra River Basin, Nepal, AGU Fall Meeting 2018, USA, Dec 10 – 14, 2018.
97. Prajapati, R., Thapa, B.R., **Talchabhadel, R.**, Pandey, A., Davids, J.C., Devkota, N.: Investigating the nexus between rainfall, land use and groundwater level in the Kathmandu valley, Nepal, AGU Fall Meeting 2018, USA, Dec 10 – 14, 2018.
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100. **Talchabhadel, R.**, Kazuyuki, O., Nakagawa, H., Kawaike, K.: Numerical simulation of an open approach flooding for long-term sediment management: a case study of a tide-dominated river in southwestern Bangladesh, 37 Annual meeting of Japan Society for Natural Disaster Science, Japan, Oct 6 -7, 2018.
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111. Dahal, V., Bhattarai, R., Shakya, N.M., **Talchabhadel, R.**, Dugar, S.: Estimating the impact of climate change on streamflow in Bagmati Watershed, Nepal, ASABE Annual International Meeting, New Orleans, USA, Jul 26-29, 2015.

Professional Experience

- ☐ **Working as an Assistant Professor** in Jackson State University, Jackson, Mississippi, USA from August 2023
- ☐ **Worked as a Research scientist** in Texas A&M AgriLife Research, Texas A&M University, El Paso, Texas, USA, from June 2022 till July 2023
- ☐ **Worked as a Postdoctoral research associate** in Texas A&M AgriLife Research, Texas A&M University, El Paso, Texas, USA, from September 2020 to May 2022.
- ☐ **Worked as a Postdoc researcher** at Disaster Prevention Research Institute, Kyoto University, Kyoto, Japan, from October 2017 to September 2020.
- ☐ **Worked as a Hydrologist engineer** in the Department of Hydrology and Meteorology, Kathmandu, Nepal, from Jun 2011 to Sep 2014.
- ☐ **Worked as a Lecturer** for Water Resources Subjects in Kantipur City College, Kathmandu & Kathmandu Engineering College, Kathmandu, Project Supervisor for final year project of Khwopa Engineering College, Bhaktapur, and GIS Trainer in Khwopa College (MSc. Environment Science), Bhaktapur, Nepal from 2011 to 2014.
- ☐ **Worked as a GIS trainer** in Soft-Tech Computer P. Ltd, Baneswor, Kathmandu, and Seagate Computer Institute., Lalitpur, Nepal, from 2011 to 2014.
- ☐ **Worked as a Water resource expert** in Team Nepal Consultancy, Kupondole, and Architecture and Research Consultancy, Kathmandu, Nepal, from 2011 to 2014.
- ☐ **Worked as a Civil engineer** in Aviyaan Consulting P. Ltd, Kathmandu, Nepal, from Feb 2010 to May 2011.