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EDUCATION

August 2016 – May 2021	The University of Iowa (UIOWA), Iowa City, Iowa, U.S. Ph.D., Hydraulics and Water Resources Advisor: Witold F. Krajewski Dissertation: Predictability of streamflow across space and time scales
August 2014 – May 2016	Southern Illinois University - Carbondale (SIUC), Illinois, U.S. M.S., Water Resources Engineering Thesis: Developing sediment transport and deposition prediction model of the Lower Ohio River near the Olmstead locks and dam area Advisor: Bruce A. DeVantier
October 2004 – March 2009	Institute of Engineering (IOE), Tribhuvan University, Lalitpur, Nepal B.E., Civil Engineering (Water Resources)

RESEARCH INTERESTS

Hydrologic forecasting; HPC-enabled large-scale hydrologic and hydraulic modeling; Hydrodynamic flood modeling; Climate change impact assessment; Hydroclimate extremes; Energy; Remote sensing and data assimilation; Natural hazards; Machine learning/Deep learning; Uncertainty quantification; Food-Water-Energy-Health nexus.

RESEARCH EXPERIENCE

November 2022 – Present	R&D Staff Water Resources Science and Engineering, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee.
May 2021 – October 2022	Postdoctoral Research Associate Water Resources Science and Engineering, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee.
August 2016 – May 2021	Graduate Research Assistant IIHR–Hydroscience & Engineering, Department of Civil and Environmental Engineering, The University of Iowa, Iowa.
June 2016 – July 2016	Transition from Masters (SIUC) to Ph.D. (UIOWA)
August 2014 – May 2016	Graduate Research Assistant Department of Civil and Environmental Engineering, Southern Illinois University–Carbondale (SIUC), Illinois.

TEACHING EXPERIENCE

August 2014 – May 2016	Teaching Assistant ENGR370 Fluid Mechanics (Fluid mechanics lab instructor) Southern Illinois University-Carbondale (SIUC), Illinois.

PROFESSIONAL EXPERIENCE

June 2010 – July 2014	Civil–Hydropower Design Engineer/ Deputy Design Team Leader Hydro–Consult Engineering Ltd., Kathmandu, Nepal.
May 2009 – May 2010	Civil–Hydropower Engineer Tundi Power Company, Lalitpur, Nepal.

KEY DATASET AND SOFTWARE

[7] Turner, S.W.D., **Ghimire, G.R.**, Hansen, C., Singh, D., and Kao, S.C. (2024). *Hydropower Capacity Factor Trends and Analytics for the United States*. HydroSource. Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. https://doi.org/10.21951/hydro_trends/2349418.

[6] Broman, D., Kao, S.-C., Voisin, N., Zhou, T., **Ghimire, G. R.**, & Fernandez, A. (2024). *CONUS-wide HUC4 Watershed Scale Hydropower Projections derived from 9505 Third Assessment (1.0)* [Data set]. Zenodo. https://doi.org/10.5281/zenodo.10535565.

[5] **Ghimire, G.R.**, Kao, S.C., and Gangrade, S. 2023: *Dayflow: CONUS Daily Streamflow Reanalysis, Version 2 (DayflowV2)*. Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. https://doi.org/10.13139/OLCF/2222888.

[4] Kao, S.C., **Ghimire, G.R.**, and Gangrade, S. 2023: *CMIP6-based Multi-model Streamflow Projections over the Conterminous US*. HydroSource. Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. https://doi.org/10.21951/9505V3Flow/2007926.

[3] Carly H. Hansen, **Ganesh R. Ghimire**, and Paul G. Matson. 2023. *Hydropower Energy Storage Capacity Dataset, Version 2*. HydroSource, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. https://doi.org/10.21951/HESC/1972462.

[2] **Ghimire, G.R.**, Hansen, C., Gangrade, S., Kao, S.C., Thornton, P., and Singh, D. 2022: *Dayflow: CONUS Daily Streamflow Reanalysis, Version 1*. HydroSource, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. https://doi.org/10.21951/Dayflow/1847639.

[1] Hansen, C.H., **Ghimire, G.R.**, and Gangrade, S. 2021: *Hydropower Energy Storage Capacity Dataset*. HydroSource, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA. https://doi.org/10.21951/HESC/1822833.

KEY PUBLICATIONS

[31] **Ghimire, G.R.**, Kao, S.C., and Gangrade, S. 2024: Dayflow Version 2: Hourly Streamflow Reanalysis in the Conterminous United States Leveraging Multiple Gridded Precipitation Datasets. *Water Resources Research* (In review)

[30] **Ghimire, G.R.**, Liu, Y., Jager, H., Gangrade, S., Kao, SC., Parish, E., and DeRolph, C. 2024: Integrated Modeling Quantifies the Economic Benefits of Planting Climate-Resilient Perennial Biomass Crops in Flood-prone Agricultural Landscapes. *Journal of Flood Risk Management* (In review)

[29] Broman, D., Voisin, N., Kao, S.C., Fernandez, A., and **Ghimire, G.R.** 2024: Multi-scale impacts of climate change on hydropower for long-term water-energy planning in the contiguous United States. *Environmental Research Letters* https://doi.org/10.1088/1748-9326/ad6ceb.

[28] Turner, S.W.D., **Ghimire, G.R.**, Hansen, C., Singh, D., and Kao, S.C. 2024: Hydropower capacity factors trending down in the United States. *Nature Communications*. https://doi.org/10.1038/s41467-024-49553-x.

[27] Bista, S., Baniya, R., Sharma, S., **Ghimire, G.R.**, Panthi, J., Prajapati, R., Thapa, B.R., and Talchabhadel, R. 2023: Hydrologic applicability of satellite precipitation estimates for irrigation water management in the data-scarce region. *Journal of Hydrology* https://doi.org/10.1016/j.jhydrol.2023.130157.

[26] Baniya R., Regmi, R.K., Talchabhadel, R., Sharma, S., Panthi, J., **Ghimire, G.R.**, Bista, S., and Thapa, B.R. 2023: Integrated modeling for assessing climate change impacts on water resources and hydropower potential in the Himalayas. *Theoretical and Applied Climatology* https://doi.org/10.1007/s00704-024-04863-4.

[25] Gangrade, S., **Ghimire, G.R.**, Kao, S.C., Morales-Hernández, M., Tavakoly, A.A., Gutenson, J.L., Sparrow, K.H., Darkwah, G.K., Kalyanapu, A.J., and Follum, M.L. 2023: Unraveling 2021 Central Tennessee flood event using a hierarchical multi-model inundation modeling framework. *Journal of Hydrology* https://doi.org/10.1016/j.jhydrol.2023.130157.

[24] Baniya R., Talchabhadel, R., Panthi, J., **Ghimire, G.R.**, Sharma, S., Khadka, P., Shin, S., Pokhrel, Y., Bhattarai, U., Prajapati, R., Thapa, B.R., and Maskey, R.K. 2023: Nepal Himalaya offers considerable potential for pumped storage hydropower. *Sustainable Energy Technologies and Assessments* https://doi.org/10.1016/j.seta.2023.103423.

[23] **Ghimire, G.R.**, Hansen, C., Gangrade, S., Kao, S.C., Thornton, P., and Singh, D. 2022: Insights from Dayflow: A historical streamflow reanalysis dataset for the Conterminous United States. *Water Resources Research* https://doi.org/10.1029/2022WR032312.

[22] Sharma, S., **Ghimire, G.R.**, and Siddique, R. 2022: Machine Learning for Postprocessing Ensemble Streamflow Forecasts. *Journal of Hydroinformatics* https://doi.org/10.2166/hydro.2022.114.

[21] Shrestha R., Rakhal, B., Adhikari, T.R., **Ghimire, G.R.**, Talchabhadel, R., Tamang, D., KC, R., and Sharma, S. 2022: Farmers' Perception of Climate Change and its Impacts on Agriculture. *Hydrology*, *9*, 212. https://doi.org/10.3390/hydrology91202123

[20] Hansen, C., **Ghimire, G.R.**, and Kao, S.C. 2022: Evaluation of nominal energy storage at existing hydropower reservoirs in the US. *Water Resources Research* https://doi.org/10.1029/2022WR032210

[19] Sharma, S., Talchabhadel, R., Nepal, S., **Ghimire, G.R.**, Rakhal, B., Panthi, J., Adhikari, B.R., Pradhanang, S.M., Maskey, S., and Kumar, S. 2022: Increasing risk of cascading hazards in the central Himalayas. *Natural Hazards* https://doi.org/10.1007/s11069-022-05462-0

[18] **Ghimire, G. R.**, Krajewski, W.F., Ayalew, T.B., and Goska, R. 2022: Hydrologic investigations of radar-rainfall errors propagation to rainfall-runoff model hydrographs. *Advances in Water Resources* https://doi.org/10.1016/j.advwatres.2022.104145

[17] Sharma, S., Dahal, K., Nava, L., Gouli, M. R., Talchabhadel, R., Panthi, J., Roy, T., and **Ghimire, G.R.** 2022: Natural Hazards Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science *Earth and Space Science* https://doi.org/10.1029/2021EA002114 (Featured as a Research Spotlight on AGU *EOS* issue https://eos.org/research-spotlights/icon-principles-underused-as-a-natural-hazards-research-tool).

[16] Krajewski, W.F., **Ghimire, G. R.**, Demir, I., and Mantilla, R. 2021: Real-time streamflow forecasting: AI vs. Hydrologic insights. *Journal of Hydrology X* https://doi.org/10.1016/j.hydroa.2021.100110

[15] Sharma, S., **Ghimire, G.R.**, Talchabhadel, R., Panthi, J., Lee, B.S., Sun, F., Baniya, R., and Adhikari, T.R. 2021: Characterizing uncertainties surrounding fluvial flood hazard estimates using a Bayesian approach. *Hydrologic Sciences Journal* https://doi.org/10.1080/02626667.2021.1999959

[14] **Ghimire, G. R.**, Jadidoleslam, N., Goska, R., and Krajewski, W.F. 2021: Insights into storm direction effect on flood response. *Journal of Hydrology* https://doi.org/10.1016/j.jhydrol.2021.126683

[13] Panthi, J., Talchabhadel, R., **Ghimire, G.R.**, Sharma, S., Dahal, P., Baniya, R., Boving, T., Pradhanang, S.M., and Parajuli, B. 2021: Hydrologic regionalization under data scarcity: An implication for streamflow prediction *ASCE Journal of Hydrologic Engineering,* https://doi.org/10.1061/(ASCE)HE.1943-5584.0002121

[12] **Ghimire, G. R.**, Krajewski, W.F., and Quintero, F. 2021: Scale-dependent value of QPF for real-time streamflow forecasting. *Journal of Hydrometeorology,* https://doi.org/10.1175/JHM-D-20-0297.1

[11] Rakhal, B., Sharma, S., **Ghimire, G.R.**, Adhikari, T.R., and Shrestha, R. Nepal's communities brace for multihazard risks. *EOS,* 102, https://doi.org/10.1029/2021EO159039

[10] Talchabhadel, R., **Ghimire, G.R.**, Sharma, S., Dahal, P., Panthi, J., Baniya, R., Pudashine, J., Thapa, B.R., PC, S., and Parajuli, B. 2020: Weather radar in Nepal: Opportunities and challenges in a mountainous region. *Weather,* https://doi.org/10.1002/wea.3994

[9] Talchabhadel, R., Panthi, J., Sharma, S., **Ghimire, G.R.**, Baniya, R., Dahal, P., Baniya, M.P., K.C, S., Jha, B., Kaini, S., Dahal, K., Gnyawali, K.R., Parajuli, B., and Kumar, S. 2021: Insights on the impacts of hydroclimatic extremes and anthropogenic activities on sediment yield of a river basin *Earth*, 2(1), 32-50, https://doi.org/10.3390/earth2010003

[8] Rakhal, B., Adhikari, T.R., Sharma, S., and **Ghimire, G.R.**2021: Assessment of channel shifting of Karnali Megafan in Nepal using remote sensing and GIS. *Annals of GIS,* https://doi.org/10.1080/19475683.2021.1871950

[7] **Ghimire, G.R.**, DeVantier, B.A., and Sharma, S. 2020: Site-specific sediment deposition model for dredging planning: Case study of Olmstead locks and dam. *ASCE Journal of Waterway, Port, Coastal and Oceanic Engineering*. https://doi.org/10.1061/(ASCE)WW.1943-5460.0000598

[6] **Ghimire, G. R.**, Sharma, S., Panthi, J., Talchabhadel, R., Parajuli, B., Dahal, P., and Baniya, R. 2020: Benchmarking real-time streamflow forecasting skill in the Himalayan region. *Forecasting*, 2, 3, 230-247, https://doi.org/10.3390/forecast2030013

[5] **Ghimire, G. R.**, and Krajewski, W. F. 2020: Hydrologic implications of wind farm effect on radar-rainfall observations. *Geophysical Research Letters*, 47, https://doi.org/10.1029/2020GL089188

[4] **Ghimire, G. R.**, Jadidoleslam, N., Krajewski, W.F., and Tsonis, A. A. 2020: Insights on streamflow predictability across scales using horizontal visibility graph-based networks. *Frontiers in Water*, 2, 17, 1-15, https://doi:10.3389/frwa.2020.00017

[3] Krajewski, W. F., **Ghimire, G. R.**, and Quintero, F. 2020: Streamflow forecasting without models. *Journal of Hydrometeorology*, 21, 1689-1704, https://doi.org/10.1175/JHM-D-19-0292.1

[2] **Ghimire, G. R.**, and W. F. Krajewski, 2020: Exploring persistence in streamflow forecasting. *Journal of the American Water Resources Association*, 56, 542–550, https://doi.org/10.1111/1752-1688.12821

[1] **Ghimire, G.R.**, W.F. Krajewski, and R. Mantilla. 2018: A power law model for river flow velocity in Iowa basins. *Journal of the American Water Resources Association*, 1–13, https://doi.org/10.1111/1752-1688.12665

RESEARCH PROJECTS

[5] Awarded DOE WPTO Hydropower Lab Call proposal 2024: Impact-Informed Dam Safety Risk Assessment for Climate Change Enhanced Floods (PI; $ 900k)

[4] MSI STEM Research & Development Consortium (MSRDC) proposal 2023: Developing advanced tools for sensitivity analysis and uncertainty quantification for a coupled climate-hydrologic-hydropower system modeling (co-I; under review)

[3] Awarded DOE's Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program proposal, 2023: Open-source ensemble hydrodynamic flood risk assessment for climate change (co-I: 3 million node hours in OLCF Frontier and Aurora)

[2] Awarded DOD's Environmental Security Technology Certification Program (ESTCP) program grant, 2022: A demonstration of climate-informed flood vulnerability assessment for Department of Defense installations (co-I: $1.5 million)

[1] Awarded DOE Water Power Technology Office (WPTO) hydropower lab seedling program request for innovation grant, 2022: Flood hazard and uncertainty assessment tool for evaluating dam safety under climate change (PI; $50k)

CONFERENCE PAPER / PRESENTATIONS

[45] ASCE EWRI Conference, 05/2024, Miluwake, WI. Shifted Flood Frequencies in the Mid-Atlantic US: Insights from Downscaled CMIP6 Hydroclimate Projections (Speaker)

[46] ASCE EWRI Conference, 05/2024, Miluwake, WI. Ensemble Flood Inundation Mapping under Changing Climate Conditions: A Case Study Driven by Downscaled CMIP6 Projections

[43] Delivered an invited talk on "Advancing Streamflow and Flood Inundation Reanalysis in the Conterminous United States" at the Iowa Flood Center seminar, 02/2024.

[42] American Meteorological Society (AMS) annual conference, 01/2024, Baltimore, MA. Advancing a High-Resolution Historical Flood Inundation Reanalysis for the Conterminous United States (speaker)

[41] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Understanding Infrastructure Resilience to Urban Flooding using Machine Learning

[40] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Drivers of Long Term Trend in U.S. Hydropower Utilization Over the Past Four Decades

[39] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Towards the Development of a Climate-Informed Flood Vulnerability Assessment Framework for Department of Defense (DoD) Installations

[38] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Scaling Up Hydrodynamic Inundation Simulation – How Far Can We Go?

[37] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Advancing Streamflow Reanalysis in the Conterminous United States: Leveraging Multiple Forcings to Enhance Peak Flow Dynamics (speaker)

[36] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Multi-objective reservoir operation to managing food, energy and water in a changing climate

[35] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Estimating future risks of hydroclimatic extremes and their impacts on US hydropower reservoirs in a warming climate

[34] Clean Currents 2023, 10/2023, Cincinnati, OH. Planning for Change: Where to Get Hydro-Climate Projection Datasets and How to Use Them (workshop)

[33] DOE-WPTO Seedlings Symposium, 08/2023, Washington, DC (virtual). Flood Hazard and Uncertainty Assessment Tool for Evaluating Dam Safety under Climate Change (speaker)

[32] World Environmental and Water Resource Congress (EWRI), 05/2023, Henderson, NV. CMIP6-informed flood hazard and uncertainty assessment for dam safety evaluation (speaker)

[31] Innovations in Climate Resilience (ICR), 03/2023, Columbus, OH. Perennial Riparian Buffers for Bioenergy: A Flood-resilient Climate Adaptation for Agricultural Landscapes (speaker)

[30] American Meteorological Society (AMS) annual conference, 01/2023, Denver, CO. Hydrodynamic Inundation Simulation for Large Global Watersheds – A Proof of Concept

[29] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL. Ecosystem Services from Partially-harvested Riparian Buffers

[28] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL. Towards the development of a high-resolution historical flood inundation reanalysis dataset for the conterminous United States

[27] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL. Accounting Uncertainties is Crucial to Improving Multipurpose Reservoir Management

[26] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL. Multi-satellite Precipitation Estimates Can Improve Irrigation Water Decisions

[25] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL. Insights from Dayflow: A Spatiotemporally Continuous Historical Streamflow Reanalysis Dataset for the Conterminous United States (speaker)

[24] AGU Frontiers in Hydrology Meeting (FIHM), 06/2022, Puerto Rico. The Water, Climate, and Energy Nexus: Charting the Role of DOE's Technology Offices (panelist)

[23] AGU Frontiers in Hydrology Meeting (FIHM), 06/2022, Puerto Rico. Unraveling an extreme flooding event using high-performance computing: A case study for the 2021 Middle Tennessee flooding (speaker)

[22] AGU Frontiers in Hydrology Meeting (FIHM), 06/2022, Puerto Rico. Improving Hydrologic Model Performance and Synthetic Rating Curves Using Streamflow Data Assimilation

[21] EWRI Conference, 06/2022, Atlanta, GA. The Applicability of Deep Learning Techniques in Developing a Surrogate Flood Inundation Model for Operational Needs.

[20] European Geosciences Union (EGU) Conference, 05/2020, Vienna, Austria. Hydrologic response to climate change: A case from a high-mountain river basin.

[19] ORNL's Your Science in a Nutshell (YSiNS) competition, 05/2022.

[18] Joint Aquatic Science Meeting (JASM), 05/2022, Grand Rapids, MI. Building bridges between big datasets to better describe US hydropower reservoirs

[17] American Geophysical Union (AGU) conference, 12/2021, New Orleans, LA. Evaluation of energy and water storage of conventional hydropower fleet in the U.S. under climate change (speaker)

[16] American Geophysical Union (AGU) conference, 12/2021, New Orleans, LA. Enhancing Operational Flexibility of Integrated Nepalese Power System through Pumped-storage Hydropower (speaker)

[15] American Geophysical Union (AGU) conference, 12/2020, San Francisco, CA. Basin rotation method to quantify the effect of rainstorm movement on flood peak response (speaker)

[14] American Geophysical Union (AGU) conference, 12/2020, San Francisco, CA. Climate-informed decision-making for hydropower resilience in the central Himalayas

[13] AWRA 2020 Virtual Geospatial Water Technology Conference, 08/2020, Austin, TX. Predictability of streamflow from complex networks (speaker)

[12] European Geosciences Union (EGU) Conference, 05/2020, Vienna, Austria. Scale-Dependent Worth of QPF for Real-Time Streamflow Forecasting (speaker), and Inference On Streamflow Predictability Using Horizontal Visibility Graph Based Networks (speaker)

[11] American Geophysical Union (AGU) conference, 12/2019, San Francisco, CA. Streamflow forecasting without models

[10] American Geophysical Union (AGU) conference, 12/2019, San Francisco, CA. In Quest for Rainfall Estimation Adequate for Real-Time Streamflow Forecasting

[9] 12th International Precipitation Conference (IPC12), 06/2019, Irvine, CA. Hydrologic investigations of propagation of errors in rainfall to hydrographs (speaker)

[8] American Geophysical Union (AGU) conference, 12/2018, Washington D.C. A Framework for Evaluating the Propagation of Errors in Rainfall to Hydrographs (speaker)

[7] American Meteorological Society (AMS) Annual Meeting, 1/2018, Austin, TX. Hydrologic Routing Model of the Iowa Flood Center Real-Time Streamflow Forecasting System

[6] American Meteorological Society (AMS) Annual Meeting, 1/2018, Austin, TX. Evaluation Studies of Real-Time Flood Forecasting: A Review of Issues

[5] American Geophysical Union (AGU) conference, 12/2017, New Orleans, LA. A Hydrologic Routing Model Based on Geomorphological Characteristics of the River Network

[4] American Geophysical Union (AGU) conference, 12/2017, New Orleans, LA. Effects of Radar-Rainfall Products on Distributed Streamflow Prediction

[3] American Geophysical Union (AGU) conference, 12/2017, New Orleans, LA. A Hydrologic Routing Model Based on Geomorphological Characteristics of the River Network

[2] World Environmental and Water Resources (EWRI) Congress, 05/2016, West Palm Beach, FL. "Sediment modeling to develop a deposition prediction model at the Olmsted locks and dam area" and "Role of low impact development in the attenuation of flood flows in urban areas".

[1] Mid-American Environmental Engineering Conference (MAEEC), 09/2015. Columbia, MO. Developing sediment transport and deposition prediction model of Lower Ohio River near the Olmstead locks and dam area.

CONFERENCE / WORKSHOP ORGANIZING

[7] American Meteorological Society (AMS) Annual Meeting, 01/2024, Baltimore, MD. Advances in Large-scale Flood Modeling, Monitoring, Forecasting, Analysis, and Management (convener)

[6] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Recent Advances in Large-Scale High-Resolution Hydrologic and Flood Modeling and Hydroclimatic Extremes Assessment (convener)

[5] American Geophysical Union (AGU) conference, 12/2023, San Francisco, CA. Hydroclimatic Disasters in Data-Scarce Regions: Interfacing Science and Policy Poster (convener)

[4] American Meteorological Society (AMS) Annual Meeting, 01/2023, Denver, CO. Recent Advances in Modeling, Monitoring, and Forecasting of Floods (convener)

[3] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL (convener). Recent Advances in Large-Scale High-Resolution Hydrologic and Flood Modeling and Hydroclimatic Extremes Assessment - Assigned by Committee

[2] American Geophysical Union (AGU) conference, 12/2022, Chicago, IL (convener). Hydroclimatic Modeling, Analyses, and Projections in South Asia and Southeast Asia: Challenges and Opportunities

[1] American Geophysical Union (AGU) conference, 12/2021, New Orleans, LA (convener). Hydroclimatic Modeling, Analyses, and Projections in South Asia: Challenges and Opportunities

WORKSHOPS / TRAINING

- DOE's Climate Communication Workshop, 05/2022. ORNL.
- ATS-Amanzi Hydrologic Modeling Workshop, 08/2021. ORNL.
- The Community WRF-Hydro Modelling System Training Workshop, 06/2018. CUASHI-NCAR, Boulder, CO.
- Pre-conference Workshop on quantitative precipitation estimates (QPE), CHRS-PERSIANN, extreme value analysis, and National Water Model, 06/2019. Irvine, CA.
- Machine learning with Python workshop, 11/2019, The University of Iowa, Iowa City, IA.

HONORS / AWARDS

2021	Dan Branson fellowship ($3,000)
2020	Ballard and Seashore Ph.D. dissertation fellowship ($10,000)
2018/2019/2020	CGRER travel grant for AGU conference
2018	CUASHI travel grant for WRF-Hydro training workshop
2004	Undergraduate fellowship, Tribhuvan University, Nepal

PROFESSIONAL MEMBERSHIPS

American Geophysical Union; American Water Resources Association; European Geosciences Union; Nepal Engineer's Association; ASCE; Society for Industrial and Applied Mathematics; Engineer in Training (EIT), Michigan board

LEADERSHIP ROLES

August 2016 – April 2021	President, Nepalese Student Association, The University of Iowa

TECHNICAL SKILLS

Programming language:	Python, MATLAB, R, FORTRAN, PostgreSQL
Hydrologic models:	VIC, RAPID, Hillslope-Link Model (HLM), WRF-Hydro, HEC-HMS
Hydraulic/hydrodynamic models:	TRITON, HEC-RAS 1D/2D, HEC-GeoRAS, CCHE2D, EPA-SWMM
Datasets:	MRMS, NLDAS-2, Stage IV, HRRR, GFS, GEOS, WPC, APHRODITE
Data formats:	HDF5, NetCDF, GRIB2, ASCII, DAT, CSV
Statistics:	Bayesian statistics, Geostatistical analysis, Nonlinear dynamics, Extreme value theory, Time series modeling, Forecast verification, Uncertainty quantification, OpenBUGS, SAS
Research tools:	High-performance computing (HPC; OLCF facilities such as Summit and Andes; US AirForce HPC11), Google Earth Engine, Unix/Linux, Git/GitHub, ArcGIS/QGIS, Latex, Data Visualization

REVIEWER FOR JOURNALS

Water Resources Research; Journal of Hydrometeorology; Journal of Hydrology; Nature Scientific Reports; Geophysical Research Letters; Environmental Modeling and Software; Journal of the American Water Resources Association; Frontiers in Water; Earth System Science Data; Sustainable and Resilient Infrastructure; Journal of Hydroinformatics; Earth's Future; Natural Hazards

Proposal Reviewer for NSF and DOE