Nishan Bhattarai, Ph.D.

Assistant Professor, Department of Geography & Environmental Sustainability
University of Oklahoma, Norman, OK 73019
100 E Boyd Street, 618 SEC/Email: nishan@ou.edu
Website *Google Scholar*, *ORCID*, *ResearchGate*

ACADEMIC APPOINTMENTS

2022-	*Assistant Professor*, Department of Geography & Environmental Sustainability, University of Oklahoma, Norman, OK
	Affiliate, Data Institute for Societal Challenges (DISC)
	Affiliate, Institute for Resilient Environmental and Energy Systems (IREES)
2020-2022	*Postdoctoral Research Associate (Research Physical Scientist)*, Hydrology and Remote Sensing Lab, USDA-ARS, Beltsville, MD/Supervisor: Dr. William P. Kustas
2016-2020	*Postdoctoral Research Fellow*, School for Environment & Sustainability, University of Michigan, Ann Arbor, MI/Supervisor: Dr. Meha Jain
2015-2016	*Postdoctoral Fellow*, Fletcher School of Law & Diplomacy, Tufts University, MA/Supervisor: Dr. Avery Cohn
2011-2014	*Teaching Assistant,* Dept. of Environmental Resources Engineering, State University of New York, College of Environmental Science & Forestry (SUNY-ESF), Syracuse, NY
2010-2011	*Research Project Assistant*, Dept. of Environmental Resources Engineering, SUNY-ESF, Syracuse, NY
2008-2010	*Research Assistant*, Department of Biosystems Engineering, Auburn University, AL

EDUCATION

Ph.D. 2015	SUNY College of Environmental Science & Forestry, Syracuse, NY Department of Environmental Resources Engineering Dissertation Title: *Single-source surface energy balance algorithms to estimate evapotranspiration from satellite-based remotely sensed data* Supervisor: Dr. Lindi J. Quackenbush
MS 2010	Auburn University, Auburn AL Department of Biosystems Engineering and School of Forestry & Wildlife Sciences Dissertation Title: *Use of Remotely Sensed Data to Quantify Plant Water Use from Irrigated Lands in Wolf Bay Watershed Area* Supervisors: Dr. Mark Dougherty and Dr. Latif Kalin
B.S. 2006	Tribhuvan University, Institute of Forestry, Nepal BS Thesis Title: *Status of good governance in two community forests in Gorkha, Nepal;* Thesis Supervisor: Dr. Bir Bahadur Khanal Chhetri

PUBLICATIONS

38 published and 6 under review/revisions; *Graduate, Student, ** Undergraduate student, +indicates shared first authorships

Under Review/Revisions

1. Bhattarai N, Kustas WP, D'Urso G, Gao F, Bambach-Ortiz N, Anderson M, Kang Y, Mallick K, McElrone AJ, Alsina MM, Mckee L, Knipper KR, Alfieri JG, Prueger JH, & Belfiore OR, Monitoring Crop Water Use Across California Vineyards through Synergistic Use of Landsat 8 and Sentinel-2 Spectral Data.

2. Jiang Q, Xu Z, Bhattarai N**,** Lin Y, Xiao H, Ren J, Pahlow M, Jiang Z, Liu Y, Wu X, Ye G, Zhang H, Li J, Zhu P, Liang S, Cui Y, Liao C, Dong L, Liu J. Metacoupling for Sustainable Development Worldwide. ***Nature Communications***. (Revised Version Under Review)
3. Xu Z, Chen X, Jiang Q, Wu X, Bhattarai N, Mullen J, Gurney G, Li S, Li C, Yin T, Li Z, Fan F, Zhang J, Han S, & Liu J. Spatiotemporal Imbalance and Coordination of Global Sustainable Development. ***Nature Communications***. (In Revisions)
4. Wagle P, Shayeghi A*, Bhattarai N, Northup BK, Baral R, Moffet C, Gunter SA, & Baral R. Assessing Evapotranspiration in Rainfed and Irrigated Alfalfa in the US Southern Great Plains using Eddy Covariance Measurements and OpenET Products. ***Agricultural & Forest Meteorology*** (Under Review).
5. Jalali J, Bhattarai N, Greene J, Liu T, Marko O, Radulovia M, Sears M, Woznicki SA, 2024. Climate change threatens water resources for major crops in Serbia's Danube Basin by mid-21st century. ***Journal of Hydrology Regional Studies*** (Under Review).
6. Prudente V, Medina MC, Krishna V, Euler M, Bhattarai N, Lerner A, McDonald AJ, Sherpa S, Rajan H, Urfels A, Santana C, Jain M, 2024. Mapping grain crop start of season in smallholder systems using optical imagery (Under Review).
7. Jain, M., Prudente V, Zhou W, Deshpande M, Bhattarai N, Ishtiaque A, Singh, B. Tradeoffs between crop yield, agricultural residue burning, and groundwater depletion in India's wheat belt. (Submitted).

Published

8. He L, Bhattarai N, Pokhrel Y, Jia N, Ye G, Song C, Xu Z, Wu S, Li Z. 2024. Dynamics of land cover changes and carbon emissions driven by large dams in China. ***iScience*** 27:109516 [Link].
9. Bhattarai N, Lobell DB, Singh B, Fishman R, Kustas WP, Pokhrel Y, and Jain M. 2023. Warming temperatures exacerbate groundwater depletion rates in India. ***Science Advances***, 35, 9, eadi1401. [Link]. * *Media: NYTimes, The Hindu, The Times of India, The Economic Times, The Weather Channel*
10. Hu T, Mallick K, Hitzelberger P, Didry Y, Boulet G, Szantoi Z, Koetz B, Alonso I, Pascolini-Campbell M, Halverson G, Cawse-Nicholson K, Hulley G, Hook S, Bhattarai N, Olioso A, Roujean JL, Gamet P, Su B, 2023. Evaluating European ECOSTRESS Hub Evapotranspiration Products Retrieved from Three Structurally Contrasting SEB Models over Europe. ***Water Resources Research,*** 59, e2022WR034132 [Link].
11. Zhou Y, Wang H, Liu Z**,** Bhattarai N, Paudel J**,** & Qiu H. 2023**.** Can solar photovoltaic plants reduce carbon emissions & increase income in China? ***Environmental Science & Technology***, 57, 49, 20583–20594 [Link]
12. Javed T, Bhattarai N, Acharya BS, Zhang J, 2023. Monitoring agricultural drought in Peshawar Valley, Pakistan using long-term satellite & meteorological data. ***Environmental Science and Pollution Research***. [Link]
13. Dhal S, Wyatt B, Mahanta M, Bhattarai N, Sharma S, Rout, T, Saud P, Acharya BS 2023. Internet of Things (IoT) in Digital Agriculture: An Overview. ***Agronomy Journal*** (Link).
14. Mallick K, Baldocchi D, Jarvis A, Hu T, Trebs I, Sulis M, Bhattarai N, Bossung C, Eid Y, Cleverly J, Beringer J, Woodgate W, Silberstein R, Hinko-Najera N., Meyer WS, Ghent D, Szantoi Z, Boulet G, Kustas WP, 2022. Insights into the Aerodynamic versus Radiometric Surface Temperature Debate in Thermal-based Evaporation Modeling. ***Geophysical Research Letters*** 49, e2021GL097568 [Link].
15. Bai Y, Bhattarai N, Mallick K, Zhang S, & Zhang J. 2022. Thermally derived evapotranspiration from the Surface Temperature Initiated Closure (STIC) model improves cropland GPP estimates under dry conditions. ***Remote Sensing of Environment*** 271: 112901 [Link].
16. Bhattarai N, Guido D'Urso, Kustas WB, Bambach-Ortiz N, Knipper KR, Anderson M, Gao F, Alsina, MM, Aboutalebi M, Mckee L, Alfieri JG, McElrone AJ, Prueger JH, & Belfiore OR 2022.

Influence of modeling domain & meteorological forcing data on daily evapotranspiration estimates from a Shuttleworth-Wallace model using Sentinel-2 surface reflectance data. ***Irrigation Science*** 40, 497-513 [Link].

17. Jiang Q, Bhattarai N, Pahlow M, & Xu Z, 2022. Environmental Sustainability and Footprints of Global Aquaculture. ***Resources Conservation & Recycling*** 180: 106183 [Link].
18. Xu G, Dong H, Xu Z, & Bhattarai N. 2022. China can reach carbon neutrality before 2050 by improving economic development quality. ***Energy*** 243:12083.[Link]
19. Singh KK, Bhattarai N, & Vukomanovic J. 2022. Landscape-scale hydrologic response of plant invasion relative to native vegetation in urban forests. ***Science of the Total Environment***, 802:149903 [Link].
20. 26. Bhattarai N*, Pollack A**+, Lobell D, Fishman R, Singh B, Dar A, & Jain M. 2021. The impact of groundwater depletion on agricultural production in India. ***Environmental Research Letters*** 16:085003. [Link].*Media: Mentioned in BBC News*
21. Jain M, Fishman, R, Mondal, P, Galford GL., Bhattarai N, Naeem S, Lall, U, Singh B, & DeFries RS. 2021. Groundwater depletion will reduce cropping intensity in India. ***Science Advances*** 7: eabd2849 [Link]. *Media: CNN, AAAS, NPR, Earther*.
22. Trebs I, Mallick K, Bhattarai N, Sulis M, Cleverly J, Woodgate W, Silberstein R., Najera,Hinko-Najera, N., Beringer J, Su Z, & Boulet G. 2021. The role of aerodynamic resistance in thermal remote sensing-based evapotranspiration models. ***Remote Sensing of Environment*** 264: 112602 [Link].
23. Bai Y, Zhang S, Bhattarai N, Mallick K, Qi L, Tang L, Im J, Guo L, & Zhang J. 2021. On the use of machine learning algorithms to improve cropland evapotranspiration across a wide environmental gradient. ***Agricultural and Forest Meteorology***, 288-289: 208308 [Link].
24. Javed T, Zhang J, Bhattarai N, Zhang S, Rashid S, Yun B, Ahmad S, Henchiri M, Kamran M. 2021. Drought characterization across agricultural regions of China using standardized precipitation and vegetation water supply indices. ***Journal of Cleaner Production***, 313: 127866 [Link].
25. Rao P, Zhou W, Bhattarai N, Srivastava A, Singh B, Poonia S, Lobell D, and Jain M. 2021. Using Sentinel-1, Sentinel-2, & Planet Imagery to Map Crop Type of Smallholder Farms. ***Remote Sensing***, 13: 870 [Link].
26. Khand K, Bhattarai N, Taghvaeian S, Wagle P, Gowda P, & Alderman P. 2021. Modeling evapotranspiration of winter wheat using contextual and pixel-based surface energy balance models. ***Transactions of ASABE*** [Link].
27. Xu Z, Chen X, Liu J, Zhang Y, Chau S, Bhattarai N, Wang Y, Li Y, Li Y, & Connor T. 2020. Impacts of irrigated agriculture on food–energy water–CO2 nexus across metacoupled systems. ***Nature Communications*** 11, 5837. [Link]; 2020 Top 50 Earth, Environmental, and Planetary Sciences Articles; Media*: SciMag, Phys.org, EurekaAlert*
28. Niraula R, Saleh A, Bhattarai N, Bajgain R, Kannan N, Osie E, Gowda P, Neel J, Xiao X, & Basara J. 2020. Understanding the effects of pasture type and stocking rate on the hydrology of Southern Great Plains. ***Science of the Total Environment***, 708: 134873. [Link]
29. Bhattarai N, Mallick K., Stuart J.**, Vishwakarma, B.D., Niraula, R., Sen, S., & Jain, M. 2019. An automated multi-model evapotranspiration mapping framework using remotely sensed and reanalysis data. ***Remote Sensing of Environment***, 229: 69-92. [Link]
30. Cohn A, Bhattarai N, Campolo J, Crompton, O, Dralle D, Duncan J, & Thompson S, 2019. Forest loss in Brazil increases maximum temperatures within 50km. ***Environmental Research Letters***, 14: 084047. [Link] Media: *phys.org, Scientific American, Newsroom*
31. Kafley H, Lamichane BR, Maharjan R, Khadka M, Bhattarai N, & Gompper ME, 2019. Tiger and leopard co-occurrence: intraguild interactions in response to human and livestock disturbance, ***Basic and Applied Ecology***.[Link]

32. Bhattarai N & Liu T. 2019. LandMOD ET Mapper: a new Matlab-based graphical user interface (GUI) for automated implementation of SEBAL and METRIC models in thermal imagery. ***Environmental Modelling and Software***, 118: 76-82. [Link]
33. Kafley H, Lamichane BR, Maharjan R, Thapaliya B, Bhattarai N, Khadka M, & Gompper M.E. 2019. Estimating Prey Abundance and Distribution from camera Trap data using bionomical mixture models. ***European Journal of Wildlife Research*** 65: 77. [Link]
34. Mallick K, Wandera L, Bhattarai N, Hostache R, Chormanski J, & Kleniewska M. 2018. A critical evaluation on the role of aerodynamic and canopy-surface conductance parameterization in SEB and SVAT models for simulating evapotranspiration: a case study in the Upper Biebrza National Park wetland. ***Water,*** 10 (12): 1753. [Link]
35. Bhattarai N, Mallick K, Brunsell NA, Sun G, & Jain M. 2018. Regional evapotranspiration from an image-based implementation of the Surface Temperature Initiated Closure (STIC1.2) model and its validation across an aridity gradient in the conterminous United States, ***Hydrology and Earth System Sciences***, 22: 2311-2341. [Link]
36. Niraula R, Meixner T, Dominguez F, Bhattarai N, Rodell M, Ajami H, Gochis D, & Castro C. 2017. How might recharge change under projected climate change in the western US? ***Geophysical Research Letters***, 44: 10407-10418.[Link] Media: *UA News, Science Daily, phys.org, AAAS and Eurekalert, technology.org, futurity.org*
37. Bhattarai N, Wagle P, Gowda P, & Kakani V. 2017. Utility of remote sensing-based surface energy balance models to track water stress in rain-fed switchgrass under dry and wet conditions. ***ISPRS Journal of Photogrammetry and Remote Sensing***, 133:128-141. [Link]
38. Richards P, Cohn A, Arima E, VanWey L, & Bhattarai N**,** 2017. Enforcement evasion highlights need for independent satellite monitoring for forest governance. ***Conservation Letters***, 10:497-498. [Link]
39. Bhattarai N, Quackenbush LJ, Im Jungho, & Shaw SB, 2017. A new optimized algorithm for automating endmember pixel selection in the SEBAL and METRIC models. ***Remote Sensing of Environment***,196:178-192. [Link]
40. Wagle P, Bhattarai N, Gowda P, & Kakani V. 2017. Performance of five surface energy balance models for estimating daily evapotranspiration in high biomass sorghum. ***ISPRS Journal of Photogrammetry and Remote Sensing,*** 128:192-203. [Link]
41. Richards P, Arima E, VanWey L, Cohn A, & Bhattarai N 2017. Are Brazil's Deforesters Avoiding Detection? ***Conservation Letters***, 10:470-476. [Link] Media: *Nature Climate Change; Mongabay, phys.org, eurekalert, Brown University, Nature World News, Technology.org*
42. Bhattarai N, Shaw SB, Quackenbush LJ, Im J, & Niraula R. 2016. Evaluating five remote sensing-based single-source surface energy balance models for estimating daily evapotranspiration rates in a humid subtropical climate. ***International Journal of Applied Earth Observation and Geoinformation,*** 49:75-86 [Link]
43. Bhattarai N, Quackenbush LJ, Dougherty M, & Marzen L, 2015. A simple Landsat–MODIS fusion approach for monitoring seasonal evapotranspiration at 30 m spatial resolution. ***International Journal of Remote Sensing,*** 36:115-143. [Link]
44. Shaw SB, Marrs J**, Bhattarai N, & Quackenbush LJ, 2014. Longitudinal Study of the Impacts of Land Cover Change on Hydrologic Response in Four Mesoscale Watersheds in New York State, USA. ***Journal of Hydrology,*** 519:12-22. [Link]
45. Bhattarai N, Dougherty M, Marzen L, & Kalin L. 2012.Validation of evaporation estimates from a modified surface energy balance algorithm for land model in the south-eastern US. ***Remote sensing letters,*** 3:511-519. [Link]

Book Chapter

1. Bhattarai, N, Shayeghi, A*, Jain, M, 2024. Spatiotemporal distribution and recent trends in crop water use across India (Invited Submission). NASA LUCC Remote Sensing of Land Use/Cover Changes in South/Southeast Asian Countries (CRC Press, Under Review).

RESEARCH GRANTS AND CONTRIBUTED PROPOSALS

Funded Proposals (6 PI/Co-PI under review proposal not listed)

1. **UNSA** Global Change and Human Health (GCHH) Institute (≈ $4.1 million). My role: co-PI (Nishan Bhattarai)/**PI:** Tim Filley. Period: 2025-2027.
2. **USGS** South Central Climate Adaptation Center (≈$71K)**. PI:** Nishan Bhattarai, Period: 2024-2026.
3. **NSF STTR Phase I** ($275K). My role: co-PI (Nishan Bhattarai)/**PI:** Jorge Celis**,** Period: 2025
4. **Big Idea Challenge, VPRP University of Oklahoma** (≈$300K)**.** My role: co-PI Nishan Bhattarai**/PI:** Kathy Pegion. Period: 2024-2026.
5. **Data Institute for Societal Challenges** (≈$10K), **PI:** Nishan Bhattarai, Co-I: Pradeep Wagle. Period: Summer 2023.
6. **NASA OK EPSCoR** (≈$2K). **PI:** Nishan Bhattarai, Collaborator: Simon J Hook (NASA JPL). Period: Jan-May 2025.
7. **NASA**: NNH19ZDA001N-LCLUC (≈$448K; $10K to OU). My role: Collaborator (Nishan Bhattarai)/PI Meha Jain. **Period:** Jan 2021- Dec 2024.
8. **NASA** NNH21ZDA001N-LCLUC (≈$450K). My role: Collaborator (Nishan Bhattarai)/**PI**: Sean Woznicki (Grand Valley State University), Period: Jan 2022- Dec 2025.
9. **NCAR** Computational & Information Systems Laboratory. Cheyenne (SGI ICE XA Cluster) (100,000.0 Core-hours). Project # UMIC0046, 2016-2019. PI: Nishan Bhattarai
10. **Raymond Von Dran Fund** ($2K). Project: Micro-Hydro consultants, Syracuse University. PIs: Nishan Bhattarai, John McDonald, and Prakhyat Thapa. Period: Summer 2012.

TEACHING EXPERIENCE

University of Oklahoma

GIS 4133/5133 *Fundamentals of Remote Sensing* (Fall 2024, Fall 2022, Fall 2023, Spring 2024, Spring 2025) – 3 credits

GIS 5133 (online) *Fundamentals of Remote Sensing* (Spring 2023, Summer 2023, Spring 2024, Summer 2024, Spring 2025) – 3 credits

GEOG 4293/5293 *Hydrologic Science* (Fall 2023, Fall 2024) – 3 credits

GIS 6240 *Global Water Sustainability Challenges* (3 credits, spring 2025)

University of Michigan

Co-Instructor, EAS 501 *Introduction to R* (*Natural Resources Statistics*), 1 credit (Co-designed and taught Introduction to R programming for beginners, Spring 2019)

Guest Lecturer, EAS 501 *Watershed Hydrology & Water Resources Management* (Spring 2020)

SUNY-ESF

Teaching Assistant (Aug 2011- 2014): Courses: *GIS for engineers* (Fall 2011-2013); *Statics & Dynamics* (Spring 2012); *Mechanics of Materials* (Spring 2012); *Introduction to Engineering Design* (Spring 2012-2014)

Auburn University

Teaching Assistant (2009)-*Introduction to renewable resources*

STUDENT ADVISING AND MENTORSHIP

Graduate Students (Advisees):

Afshin Shayeghi (Ph.D. Geography & Environmental Sustainability, GES, Fall 2023-),
Nastaran Abdoli (PhD, Geography & Environmental Sustainability, Fall 2024-),

Aiyesha Ghani (M.S. GES, OU, Fall 2023-),
Reeya Shrestha (MS, Fall 2024-),
Aarati Kafle (MS, Fall 2024-).

Graduate Committees: Shadi Fathollahifard (Ph.D. GES, OU, Hananeh Omidi (Ph.D., GES, OU), Jamshid Jalali (MS, Grand Valley State University), Baihong Pan (Ph.D. Biology, OU), Yuan Yao (Ph.D. Biology, OU), Ali Shojaeian (Ph.D., Civil Engineering, OU), Sadiksha Rai (Ph.D., Meteorology, OU), Li Pan (Ph.D. Biology, OU), Aman Bhatta (Ph.D., Environment and Sustainability, University of Michigan), Jorge Andrés Celis (Ph.D. 2023, OU), Kritika Pathak (MS 2023, OU), Akpoezi R. Ononeme (MS 2023, GES, OU).

Undergraduate students Mentored
University of Oklahoma: Xochitl Hidalgo (2024-), Kaleigh Dennis (2024-), Richard Garcia (Spring 2023), Ryan Penic (Spring 2023), Tim White (Spring 2023), Sujal Shrestha (Fall 2023)
University of Michigan: Shon Harris, Julia Stuart, & Reene Jia Er Siew
SUNY-ESF: Andrew Sussman, John Marrs, and Prakhyat Thapa
Other mentorship experience: *STEM Mentor/Elementary school teacher* (Jan 2015 – May 2015)

AWARDS AND HONORS

- Research Achievement Award, USDA-ARS (2021)
- Outstanding reviewer (2018), *Journal of Hydrological Engineering (ASCE)*
- ERE Departmental Award for Academic Excellence (2014), SUNY-ESF
- AGU Student Travel Award (2013), American Geophysical Union (AGU), $500
- CNY Graduate Student of the Year (2013), ASPRS, $500
- Ta Liang Memorial Award (2013), ASPRS, $2,000
- Research In Need Grant ($250), SUNY-ESF, Summer 2012
- SUNY-ESF graduate student travel Awards ($250 and $500), SUNY-ESF, 2012-2013
- ConForM/Danida fellowship (~$250) for B.S. thesis work (2005-2006)
- Merit Scholarship, Tribhuvan University (2002-2006)
- BSc Entrance Topper (science stream), Tribhuvan University (2002)

Awards won by students

- Afshin Shayeghi (Ta Liang Memorial Award, $3000, ASPRS)
- Nastaran Abdoli and Afshin Shayeghi (Robberson Travel Award, $1000, OU)
- Afshin Shayeghi (Standley Award, Outstanding publication by a graduate student, $1000, OU)
- Afshin Shayeghi (First Prize, $1000), GIS Day poster, OU)
- Afshin Shayeghi (Graduate Student Senate Grant, $750, OU)
- Sujal Shrestha (Undergraduate Research Award, $900, OU)
- Julia Stuart, 2018 South Asia Fellow (~$3000), International Institute at the University of Michigan
- Julia Stuart, 2021, Hugh G. Rumler Prize (outstanding senior), University of Michigan

SELECTED CONFERENCE PROCEEDINGS/ABSTRACTS/EDITORIAL

1. Kustas, W.P., Knipper, K., et al. with Bhattarai, N. 2024. Observations from Leaf and Canopy to Field, Landscape and Regional Scales for Understanding Soil-Plant-Atmosphere Exchange Processes Influencing Evapotranspiration in Vineyards. American Meteorological Society, Baltimore, MD [Link]
2. Mallick K Baldocchi, et al. with Bhattarai N 2023. Consort of Conductances: The Missing Biophysical Link in Thermal Remote Sensing of Terrestrial Evaporation and Inclusion for the Future LST Missions. European Space Agency- ESRIN, Italy.

3. Reddy PK, Bhattarai N, & Sen S, 2023. Understanding Evapotranspiration Variability between the Eastern and Western Himalayas. EGU General Assembly 2023 [Link]
4. Belfiore OR, Kustas WP, et al. with Bhattarai N 2023. Estimating ET by using canopy conductance models with Sentinel-2 data in irrigated crops in California and Australia. A European vision for hydrological observations and experimentation, Naples, Italy, 12–15 Jun 2023, GC8-Hydro-58 [Link].
5. Bhattarai N & Wagle P, Recent advances in remote sensing of evapotranspiration. *Remote Sensing.* 2021; 13(21):4260. [link]
6. Bhattarai N, Kustas WP, et al. 2021. Synergistic use of spectral information from Landsat & Sentinel-2 data for modeling near real-time crop water status across California vineyards. AGU Fall meetings 2021.
7. Mallick K, Hu T, Yun B, Bhattarai N, et al. Thermal and shortwave infrared remote sensing of ecosystem processes: Opportunities, synergies, and challenges. IEEE InGARSS 2021, 440-443 [Link]
8. Kustas WP, Bhattarai N, et al. Daily ET estimates from application of Shuttleworth-Wallace model with Sentinel-2 surface reflectance data over California vineyards. AGU Fall Meetings 2021 [Link]
9. Bhattarai N**,** Mallick K, & Jain M, 2019. Sensitivity of four contextual remote sensing-based SEB models to spatial domain, *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLII-3/W6, 3-7 *(Peer-reviewed)* [Link]
10. Bhattarai N**,** Quackenbush LJ, Im J, & Shaw, SB, Automation of Endmember Pixel Selection in SEBAL/METRIC Model. AGU Fall Meetings Abstracts, December 14-18, 2015, San Francisco, CA.
11. Bhattarai N**,** Quackenbush LJ, & Shaw, SB 2014. Comparison of four single-source surface energy balance-based models for estimating remotely sensed daily ET. Abstracts from the ASABE 2014 International Symposium on ET. April 7-11, 2014, Raleigh, NC.
12. Bhattarai N & Quackenbush LJ 2013. A data fusion approach for monitoring remotely sensed seasonal ET. AGU Fall Meetings Abstracts, December 9-13, 2013, San Francisco, CA.
13. Bhattarai N**,** Quackenbush LJ, Calandra L, Im J, & Teale S, 2012. An automated object-based approach to detect Sirex-infestation in pines. Proceedings of American Society for Photogrammetry and Remote Sensing (ASPRS) Annual Conference, March 19-23, 2012, Sacramento, CA.
14. Bhattarai N**,** Quackenbush LJ, Calandra L, Im J, & Teale S, 2011. Spectral analysis of Scotch pine infested by Sirex Noctillo. Proceedings of ASPRS Annual Conference, May 1-5, 2011, Milwaukee, WI.

INVITED TALKS

NASA (2024), Tarleton State University (2024), University of Oklahoma (2022), Ohio State University (2022), University of Houston (2022), Lawrence Berkeley National Lab (2020), College of William and Mary (2019), Western Michigan University (2020).

CONFERENCE PRESENTATIONS

1. A multi-sensor and multi-model synergy to enhance real-time monitoring of evapotranspiration at 10m spatial resolution to support sustainable irrigation water management. AGU Fall Meetings 2023.
2. Assessing the utility of evapotranspiration products in monitoring agricultural responses to changing climate (Poster presented by Ph.D. student Afshin Shayeghi at the AGU Fall meetings 2023)
3. A Deep Learning-Based Ensemble Surface Energy Balance Modeling Approach to Monitor Crop Water Use & Water Stress in drylands, AGU Frontiers in Hydrology, June 20, 2022, San Juan, PR

4. Synergistic use of spectral information from Landsat and Sentinel-2 data for modeling near real-time crop water status across California vineyards, December 15, 2021, AGU Fall Meetings, New Orleans, LA
5. Warming Temperatures Lead to Increased Groundwater Depletion in India, Dec 11, 2019, AGU Fall Meetings, San Francisco, CA.
6. Understanding the impacts of groundwater depletion and climate shocks on irrigation decisions in India. AGU Fall Meeting, Dec 10-14, 2018, Washington, DC.
7. An automated multi-model based evapotranspiration estimation framework for understanding crop-climate interactions in India. AGU Fall Meeting, Dec 11-15, 2017, New Orleans, LA.
8. Understanding the climate-included variations in the seasonal water demands of irrigated crops in Northern India. AGU Fall Meeting, Dec 11-16, 2016, San Francisco, CA.
9. Introduction of automated calibration approaches to the surface energy balance-based ET algorithm, ASPRS Annual Conference, Mar 23-27, 2014, Louisville, KY.
10. Comparison of four single-source surface energy balance-based models for estimating remotely sensed daily ET. ASABE 2014 International Symposium on ET. Apr 7-11, 2014, Raleigh, NC.
11. Application of remote sensing and surface energy balance algorithms in estimating ET in the southeastern US. 24th ASPRS 2013 annual conference, Mar 24-28, 2013, Baltimore, MD.
12. Using remote sensing and geospatial techniques in hydrological applications. NYGeoCon. NYGIS Association, Nov12-13, 2013, Saratoga Springs, NY.
13. Calibration of the InVEST water yield model- An automated approach, World Wildlife Fund-US, Aug 9, 2013, Washington, DC.
14. A coupled multi-sensor fusion & SEB algorithm approach to derive spatially-distributed seasonal ET.22nd GIS/SIG Annual Spatial/Digital Mapping Conference, Apr 2013, NY.
15. An automated object-based approach to detect Sirex-infestation in pines. 23rd ASPRS 2012 annual conference, Mar 19-23, 2012, Sacramento, CA.

FIELD/SUMMER EXPERIENCE

- *Research/Field Tech* (SapFlux & weather station), University of Illinois (Jun - Aug 2014)
- *Conservation Science Intern*, World Wildlife Fund for Nature, Washington, DC (Jun - Aug 2013)
- *Research Aide,* SUNY-ESF (Jun -Aug 2012)
- *International Corps Member*, EarthCorps, Seattle, WA (Jun-Dec 2007)

PROFESSIONAL SERVICES

University of Oklahoma

- Graduate Committee, DGES
- Faculty Search Committee Member (DGES, School of Meteorology, and CEES)
- Scheduling Committee, DGES
- Faculty Appeals Committee

Editor

Editorial Board member of *GIScience & Remote Sensing* (Taylor & Francis)

Guest Editor for *Remote Sensing's* Special Issue on Remote Sensing of Evapotranspiration (2020)

Peer reviewer (~170 articles for over 50+ journals)

Nature Food; Nature Communications; PNAS; Remote Sensing of Environment; Global Change Biology; Environmental Research Letters; Geophysical Research Letters; Journal of Geophysical Research-Atmospheres; Water Resources Research; Journal of Forestry & Natural Resource Management; Journal of Hydrology; Journal of Hydrometeorology; Earth's Future; ISPRS Journal of Photogrammetry & Remote Sensing; IEEE TGRS; IEEE Geoscience & Remote Sensing Letters; IEEE-JSTARS; International Journal of Applied Earth Observation & Geo-

information; Journal of Hydrologic Engineering; Scientific Reports; Agricultural &Forest Meteorology; International Journal of Remote Sensing; Science of the Total Environment; Hydrological Processes; Remote Sensing; Stochastic Environmental Research & Risk Assessment; GIScience & Remote Sensing; PLoS ONE; Hydrology; Water; Transactions of the ASABE; Applied Water Science; Sustainability; Sensors; Remote Sensing Letters; Land Use Policy; Computers & Geosciences; Environmental Processes; Irrigation & Drainage Engineering; Hydrological Sciences Journal; Environmental Modelling & Software; Advances in Space Research; Agricultural Water Management; International Journal of Commons.

Proposal Reviewer

- Served in NASA proposal (2020 and 2023) review panels
- NASA postdoctoral program proposal reviewer (2023-)
- NSF proposal reviewer (2024-)
- BELSPO, Belgian Earth Observation STEREO IV programme
- External project Advisor for International Initiate for Impact Evaluation (3ie; 2016-2018)
- Proposal reviewer for the Citrus Research Board (2021).

Scholarship panel: American Society for Photogrammetry & Remote Sensing Award Committee (ASPRS, 2022-).

Professional Memberships: American Geophysical Union (AGU, 2013-), American Society for Photogrammetry and Remote Sensing (ASPRS, 2010-2017, 2023), European Geophysical Union (EGU -2018), American Society of Agricultural & Biological Engineers (2014).

COMPUTER SKILLS

GitHub Page

- Fluent in multiple programming platforms including R, Matlab, Python, & Google Earth Engine (GEE)
- Experienced user of High-Performance Computing (HPCs)/Clusters and Stata
- GIS/Remote Sensing software, such as ArcGIS, QGIS, ENVI, ERDAS Imagine
- Basic knowledge of C/C++ and Visual Basic
- knowledge of other software, such as AutoCAD, HEC-HMS, SAS, SigmaPlot, SSH, Unix shell scripts, Git, and SQL Server.