

ERKAN ISTANBULLUOGLU

Curriculum Vitae

Department of Civil and Environmental Engineering
University of Washington
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EDUCATIONAL HISTORY

Utah State University, Logan UT
PhD., Civil and Environmental Engineering
January 2003,

Uludag University, Bursa, Turkey
MS., Agricultural Engineering
June 1998,

Uludag University, Bursa, Turkey
BS., Agricultural Engineering
June 1996

EMPLOYMENT HISTORY

University of Washington, Seattle, WA, USA
Civil and Environmental Engineering
Assistant Professor, 09/2009 – 08/2013
Associate Professor, 09/2013 – current

University of Nebraska, Lincoln, NE, USA
Geosciences & Biological Systems Engineering, 08/2005 – 08/2008
School of Natural Resources & Biological Systems Engineering, 08/2008 – 09/2009
Assistant Professor

Massachusetts Institute of Technology, Cambridge, MA, USA,
Civil and Environmental Engineering
Postdoctoral Associate, 09/2002-08/2005
Supervisor: Rafael L. Bras

Utah State University, Logan, UT, USA
Civil and Environmental Engineering & Utah Water Research Laboratory,
Research Assistant, 09/1999-09/2002
Supervisor: David G. Tarboton

Uludag University, Bursa, Turkey
Agricultural Engineering,
Research & Teaching Assistant, 09/1996-08/1999
Supervisor: A. Korukcu

AWARDS AND HONORS

Deutscher Akademischer Austausch Dienst (DAAD) Scholarship, 1995

PUBLICATIONS

Refereed Archival Journal Publications

(¹ indicates a student, ² indicates a postdoc author.)

- Caracciolo D.², L.V. Noto, E. Istanbuluoglu, S. Fatichi, X. Zhou (2014). Climate change and Ecotone boundaries: Insights from a cellular automata ecohydrology model in a Mediterranean catchment with aspect controlled vegetation patterns. *Advances in Water Resources*, v. 73 (11), p. 159-175.
- Chang J, Y. Wang, E. Istanbuluoglu, T. Bai, Q. Huang, D. Yang, and S. Huang (2014). Impact of climate change and human activities on runoff in the Weihe River Basin, China, *Quaternary International* (2014), <http://dx.doi.org/10.1016/j.quaint.2014.03.048>.
- Flores-Cervantes, J.H.² E. Istanbuluoglu, E.R. Vivoni, and R.L. Bras (2014). A geomorphic perspective on terrain-modulated organization of vegetation productivity: Analysis in two semiarid grassland ecosystems in Southwestern United States. *Ecohydrol.*, 7: 242–257. doi: 10.1002/eco.1333
- Gutierrez-Jurado, H. A., E. R. Vivoni, C. Cikoski, J. B. J. Harrison, R. L. Bras, and E. Istanbuluoglu (2013). On the observed ecohydrologic dynamics of a semiarid basin with aspect-delimited ecosystems, *Water Resour. Res.*, 49, doi:10.1002/2013WR014364.
- Zhou X., E. Istanbuluoglu, and E. R. Vivoni (2013). Modeling the ecohydrological role of aspect-controlled radiation on tree-grass-shrub coexistence in a semiarid climate, *Water Resour. Res.*, 49, doi:10.1002/wrcr.20259.
- Bracht-Flyr B.¹, E. Istanbuluoglu, and S. Fritz (2013). A hydro-climatological lake classification model based on the Budyko hypothesis and its evaluation using global data. *Journal of hydrology*, 486, 376–383.
- Frans, C., E. Istanbuluoglu, V. Mishra, F. Munoz-Arriola and D. P. Lettenmaier (2013). Are climatic or land cover changes the dominant cause of runoff trends in the Upper Mississippi River Basin?, *Geophys. Res. Lett.*, 40, 1104–1110, doi:10.1002/grl.50262.
- Soylu E.¹, J.D. Lenters, E. Istanbuluoglu, and S.P. Loheide (2012). On evapotranspiration and shallow groundwater fluctuations: A Fourier-based improvement to the White method. *Water Resour. Res.*, 48, W06506, doi:10.1029/2011WR010964.
- Herrman, K.S.², D.T. Scott, J.D. Lenters, and E. Istanbuluoglu (2012). Nutrient loss following *Phragmites australis* removal in controlled soil mesocosms. *Water, Air & Soil Pollution*, 223, 1-12. DOI 10.1007/s11270-012-1113-9
- Francipane A., V.Y. Ivanov, L.V. Noto, E. Istanbuluoglu, E. Arnone, R.L. Bras (2012). tRIBS-Erosion: A parsimonious physically-based model for studying catchment hydro-geomorphic response. *CATENA*, p. 216-231, 10.1016/j.catena.2011.10.005
- Istanbuluoglu E., T. Wang², O. M. Wright¹, and J.D. Lenters (2012). Interpretation of Hydrological Trends from a water balance perspective: The role of groundwater storage in the Budyko hypothesis, *Water Resour. Res.*, 48, W00H16, doi:10.1029/2010WR010100.

- Istanbuluoglu E., T. Wang¹, and D.A. Wedin (2012). Evaluation of Ecohydrologic Model Parsimony at Local and Regional Scales in a Semiarid Grassland Ecosystem. *Ecohydrol.* 5, 121–142, doi: 10.1002/eco.211.
- Lenters J.D., Cutrell G.J. ¹, E. Istanbuluoglu, D.T. Scott, K.S. Herrman, A. Irmak, D.E. Eisenhauer (2011). Seasonal Energy and water balance of a *Phragmites Australis*-dominated wetland in the Republican River Basin of south-central Nebraska (USA), *Journal of Hydrology*, 408 19–34.
- Soylu E. ¹, E. Istanbuluoglu, J.D. Lenters, and T. Wang¹ (2011). Quantifying the Impact of Groundwater Depth on Evapotranspiration in a Semi Arid Grassland Region, *Hydrol. Earth Syst. Sci.*, 15, 787–806.
- Yetemen O. ¹, E. Istanbuluoglu, and E.R. Vivoni (2010). The implications of geology, soils, and vegetation on landscape morphology: Inferences from semiarid basins with complex vegetation patterns in Central New Mexico, USA. *Geomorphology*, 116, 246–263.
- Wang, T¹, E. Istanbuluoglu, J. D. Lenters, and D.T. Scott (2009). On the role of groundwater and soil texture in the regional water balance: An Investigation in the Nebraska Sand Hills, USA. *Water Resour. Res.*, 45, W10413, doi:10.1029/2009WR007733.
- Istanbuluoglu E. (2009a). Modeling Catchment Evolution: From Decoding Geomorphic Processes Signatures Toward Predicting Impacts of Climate Change. *Geography Compass* 3: 10.1111/j.1749-8198.2009.00228.x
- Istanbuluoglu E. (2009b). An Eco-hydro-geomorphic Perspective to Modeling the Role of Climate in Catchment Evolution. *Geography Compass* 3: 10.1111/j.1749-8198.2009.00229.x
- Istanbuluoglu E., O. Yetemen¹, E.R. Vivoni, H.A. Gutierrez-Jurado, and R.L. Bras (2008). Eco-geomorphic implications of hillslope aspect: Inferences from analysis of landscape morphology in central New Mexico. *Geophysical Research Letters*, 35, L14403, doi:10.1029/2008GL034477.
- Irmak S., E. Istanbuluoglu, and A. Irmak (2008). An evaluation of evapotranspiration model complexity against performance in comparison with Bowen Ratio Energy Balance latent heat measurements. *Transactions of the ASABE*, vol. 51(4): 1295-1310.
- Gutiérrez-Jurado, H.A., E.R. Vivoni, E. Istanbuluoglu, and R.L. Bras (2007). Ecohydrological response to a geomorphically significant flood event in a first-order semiarid basin with contrasting hillslope ecosystems. *Geophys. Res. Lett.*, 34, L23S25, doi:10.1029.
- Grimaldi S., Nardi S, Di Benedetto F., E. Istanbuluoglu, and RL Bras (2007). A physically-based method for removing pits in digital elevation models. *Advances In Water Resources*, v. 30 (10) p. 2151-2158.
- Istanbuluoglu E., and R. L. Bras (2006). On the dynamics of soil moisture, vegetation and erosion: Implications of climate variability and change, *Water Resour. Res.* v. 42, no. 6 W06418 10.1029/2005WR004113.
- Tucker G.E., L. Arnold, R.L. Bras, H. Flores, E. Istanbuluoglu, P. Solyom (2006), Headwater channel dynamics in semi-arid rangelands, Colorado high plains, USA, *Geological Society of America Bulletin*, v. 118, no. 7/8, p. 959-974.
- Flores-Cervantes, J. H. ¹, E. Istanbuluoglu, and R.L. Bras (2006). The Development of Gullies on the Landscape: A Model of Headcut Retreat Resulting From Plunge Pool Erosion, *J. of Geophy. Res.*, 111, F01010, doi: 10.1029/2004JF000226.

- Istanbuluoglu E., and R. L. Bras (2005). Vegetation-modulated landscape evolution: Effects of vegetation on landscape processes, drainage density, and topography, *J. of Geophys. Res.*, 110, F02012, doi:10.1029/2004JF000249.
- Istanbuluoglu E., R. L. Bras, H. Flores¹, and G. E. Tucker (2005). Implications of Bank Failures and Fluvial Erosion for Gully Development: Field Observations and Modeling, *J. of Geophys. Res.* 119, F01014, doi:10.1029/2004JF000145.
- Luce C.H., D.G. Tarboton, E. Istanbuluoglu, and R. T. Pack (2005). Reply to Comment on Modeling of the interactions between forest vegetation, disturbances, and sediment yields, *J. of Geophys. Res.* 110, F01013, doi:10.1029/2004JF000279.
- Istanbuluoglu E., D. G. Tarboton, R. T. Pack and C. H. Luce (2004). Modeling of the Interactions Between Forest Vegetation, Disturbances and Sediment Yields, *J. of Geophys. Res.*, 109, F01009, doi:10.1029/2003JF000041.
- Istanbuluoglu E., D. G. Tarboton, R. T. Pack and C. H. Luce (2003). A Sediment Transport Model for Incision of Gullies On Steep Topography, *Water Resour. Res.*, 39(4), 1103, doi:10.1029/2002WR001467.
- Istanbuluoglu E., D. G. Tarboton, R. T. Pack and C. Luce (2002). A Probabilistic Approach for Channel Initiation, *Water Resour. Res.*, 38(12), 1325, doi:10.1029/2001WR000782.
- Istanbuluoglu E. (2000). Theoretical Justification of SCS Method for Runoff Estimation (Discussion). *ASCE Journal of Irrigation and Drainage Eng.* 126(1), p:74-75.

Conference proceedings and other non-journal articles

- Caracciolo D. ², E. Istanbuluoglu, L.V. Noto (2014). Modeling shrub encroachment in a grassland with a cellular automata model. *Evolving Water Resources Systems: Understanding, Predicting and Managing Water-Society Interactions* Proceedings of ICWRS2014, Bologna, Italy, June 2014. IAHS-AISH Proceedings and Reports. 364:20-25.
- Istanbuluoglu E., H. Flores, and R.L. Bras (2004). Modeling the Complex Dynamics of Landscape Development: Applications for Land Management, *24th Army Science Conference*, 29 Nov. -2 Dec., Orlando FL.
- Flores A., E. Istanbuluoglu, R.L. Bras, and D. Entekhabi (2004). A Framework for the Prediction of Soil Moisture, *24th Army Science Conference*, 29 Nov. -2 Dec., Orlando FL.
- Vivoni E.R., E. Istanbuluoglu, and R.L. Bras (2003). A Blueprint for an Integrated Watershed Hydrogeomorphic Modeling System, *Proceedings of the First Interagency Conference on Research In the Watersheds*, 27-30 October, Benson AZ.
- Istanbuluoglu E., D. G. Tarboton, R. T. Pack and C. Luce (2001). A Probabilistic Approach for Channel Initiation. In: Ramirez, J. A. (ed.), *Proceedings of the 21th AGU Hydrology Days*, p. 134-145.
- Istanbuluoglu E., H. Degirmenci, and S. Yazgan (1998). A Mathematical Simulation Model Approach in Pre-Seasonal Irrigation Planning. *Proceedings of the CIGR 13th International Congress on Agricultural Engineering*, Vol. 1, Rabat-Morocco.
- Degirmenci, H., S. Yazgan, and E. Istanbuluoglu (1998). Monitoring and Evaluation Indicators Based on Environmental Problems in Irrigation Management. *Proceedings of the Kriton Curi International Symposium on Environmental Management of the Mediterranean Sea*, 18-20 June 1998, Antalya-Turkey.

OTHER SCHOLARLY ACTIVITY

Invited lectures, colloquium

University of Tübingen, Tübingen, Germany. International Research Training Group (IRTG), upcoming, April 2015.

University of Palermo, Sicilia (Sicily), Italy. Civil and Hydraulic Engineering, 12/2012: *Extreme events and Regional Hydrology*

Boise State University, Department of Geosciences, 5/7/2012: *The Role of Solar Radiation on Landscape Dynamics, Vegetation Patterns, and Landforms.*

University of Palermo, Sicilia (Sicily), Italy. Civil and Hydraulic Engineering, 12/15/2011: *Water, Vegetation, Landscapes: Coupled Processes and Outcomes from Simple to Complex*

University of Washington, Environmental and Water Resources Seminar, 1/12/2011: *Modeling The Role of Solar Radiation on Ecohydrological Patterns and Landform Development Feedbacks.*

University of Washington, Water Center Seminar, 2/28/2010: *Landscape System Response Under a Changing Climate.*

University of Washington, Environmental and Water Resources Seminar, 12/10/2009: *Modeling the Impacts of Long-term Climate Change on Catchment Response.*

University of Minnesota, Saint Anthony Falls Laboratory (SAFL), Seminar series, 11/11/2009: *Vegetation Dynamics and Landscape Evolution.*

Nebraska Game & Parks Commission, 1/25/2009: *Hydrologic Analysis of the Niobrara River.*

Nebraska Dept. of Natural Resources, 4/15/2008: *Preliminary Analysis of the Niobrara River Hydrology.*

University of Calgary, Department of Biological Sciences, AB, CAN, 4/20/2008: *Vegetation control on landscape evolution: modeling and field observations*

Chadron State College, Chadron, NE, May 11, 2008: *Hydrology of the Niobrara River.*

European Surface Processes Group 5th Annual Meeting, Gwatt, Switzerland, 5/30/2008. *Vegetation control on landscape evolution: modeling and topographic analysis*

Ataturk University, College of Agriculture, Erzurum, Turkey, 5/30/2007. *Hydrological Organization on the Landscape.*

Stout Lecture, Department of Geosciences, University of Nebraska, Lincoln, October 2006: *Linking Biotic and Abiotic controls in landform analysis and modeling.*

University of Padova, Dept. of Land and Agroforest Environments, Padova, Italy, July 2006. *Linking ecohydrology and geomorphology in modeling landscape evolution*

University of Nebraska, Biological Systems Engineering, April 2006. *Sensitivity of basin water balance to climate fluctuations.*

New Mexico Institute of Mining and Technology (NMIMT), Dept. of Environmental Science, August 2003, Socorro NM. *Episodicity in geomorphic processes: Effects of climate, vegetation and disturbances on landscape evolution and sediment yields.*

USDA Forest Service, Post-fire Geomorphology of Southern Idaho Workshop. Boise ID, July 1-3, 2001. *A probabilistic model for channel initiation mapping*.

Wildland Fire Impacts on Watersheds: Understanding, Planning, and Response. Denver CO, October 21-23, 2003 *Models for Landslides and Debris Flow Hazard Identification: Planning for short- and long-term risks* (USGS Sponsored Meeting for resource managers).

Presentations given at conferences (presenter in bold, 9 invited)

Istanbuluoglu E., O. Yetemen, and R. Strauch (2013). Modeling Post-wildfire Sediment Availability, Supply, and Transport. AGU Chapman Conference Synthesizing Empirical Results to Improve Predictions of Post-wildfire Runoff and Erosion Response, Estes Park, CO, 25-31 August, 2013 (invited).

Caracciolo D., **E. Istanbuluoglu**, L.V. Noto (2013). Modeling the shrub and juniper encroachment in the western north America grasslands with a Cellular Automata model. AGU Fall Meeting, Dec 9-13., 2013.

Adams J.M., N.M. Gasparini, G. E. Tucker, E. Istanbuluoglu, E. Hutton, D. E. Hobley; S. Nudurupati (2013). Modeling wildfire and hydrologic response to global climate change using the Landlab modeling environment. AGU Fall Meeting, Dec 9-13., 2013.

Frans C.D., E. Istanbuluoglu, B. Naz, D. P. Lettenmaier, T. Condom, G. K. Clarke, P. J. Burns; A.W. Nolin (2013). Historical and future hydrologic response to glacier recession in the Cordillera Real, Bolivia. AGU Fall Meeting, Dec 9-13., 2013.

Tucker G.E., D. E. Hobley; N.M. Gasparini; E. Hutton; Erkan Istanbuluoglu; S. Nudurupati, Adams J.M (2013). Creative Computing with Landlab: Open-Source Python Software for Building and Exploring 2D Models of Earth-Surface Dynamics. AGU Fall Meeting, Dec 9-13., 2013.

Nudurupati S., E. Istanbuluoglu; Adams J.M., N.M. Gasparini; G. E. Tucker, E. Hutton, D. E. Hobley (2013). Landlab Ecohydrology: A component-based computational environment for ecohydrologic modeling and its illustrations through model building. AGU Fall Meeting, Dec 9-13., 2013.

Hobley D.E., G. E. Tucker; Adams J.M; N.M. Gasparini; E. Hutton., E. Istanbuluoglu; S. Nudurupati (2013). Modeling impact cratering as a geomorphic process using the novel landscape evolution model Landlab. AGU Fall Meeting, Dec 9-13., 2013.

Hobley D.E., G. E. Tucker; Adams J.M; N.M. Gasparini; E. Hutton., E. Istanbuluoglu; S. Nudurupati (2013). Landlab –A new, open-source, modular, python-based tool for modeling landscape dynamics. Geological Society of America Meeting, 27-30 Oct. 2013, Denver CO.

Yetemen, O., J.H. Flores-Cervantes, E. Istanbuluoglu, E.R. Vivoni (2013). Solar radiation signature manifested on the spatial patterns of modeled soil moisture, vegetation, and topography using an ecohydro-geomorphic landscape evolution model. AGU Fall Meeting, Dec 9-13., 2013.

Noto L.V., D. Caracciolo, S. Fatichi, E. Istanbuluoglu (2013). Predicting the impacts of climate change on plant dynamics and tree-grass-shrub competition using a Cellular Automata model in a Mediterranean catchment in Sicily, Italy. AGU Fall Meeting, Dec 9-13, 2013.

Caracciolo D., S. Fatichi, E. Istanbuluoglu, L.V. Noto (2013). Modeling the role of climate change on small-scale vegetation patterns in a Mediterranean basin using a Cellular Automata model. European Geosciences Union, General Assembly, 2013.

Gutierrez-Jurado H.A., Vivoni E.R., Cikoski C., Bras R.L., Guan H., Harrison J.B.J, and E. Istanbuluoglu (2012). Untangling the eco-hydro-geomorphic knot: Insights from an experiment seeking to explain patterns, processes, and feedbacks at the catchment scale. American Geophysical Union (AGU) fall meeting, Dec 3-7, San Francisco CA.

Naz B.S., C. D. Frans, P. Burns, L. Cuo, K. Duan, G. K.C. Clarke, A. W. Nolin, E. Istanbuluoglu, and D. P. Lettenmaier (2012). Streamflow response of partially glacierized

- river basins to glacier recession using a coupled glacio-hydrological model. American Geophysical Union (AGU) fall meeting, Dec 3-7, San Francisco CA.
- Istanbuluoglu E.**, J.H. Flores-Cervances, and O. Yetemen (2012). Coupled Modeling of Geomorphology and Ecohydrology: Topographic feedbacks driven by solar radiation. *AGU fall meeting*, Dec 3-7, San Francisco CA (Invited).
- Wright O.M.**, and E. Istanbuluoglu (2012). Restoring the hydrologic response to pre-developed conditions in an urbanized headwater catchment: Reality or utopia? *AGU fall meeting*, Dec 3-7, San Francisco CA.
- Yetemen O., J. H. Flores-Cervantes, and **E. Istanbuluoglu** (2012). Getting The Ecohydrology Right in Modeling Catchment Development. CUAHSI 3rd. Biennial Colloquium on Water Science and Engineering. July 16-18, Boulder, CO.
- Flores-Cervantes H., O. Yetemen, **E. Istanbuluoglu**, and RL Bras (2012). Modeling the role of solar radiation on landscape ecogeomorphic development. XIX International Conference on Computational Methods in Water Resources, U of Illinois, June 17-21, 2012.
- Frans C., **E. Istanbuluoglu**, and D.P. Lettenmaier (2012). Deciphering the role of climate and land use on regional hydrologic trends: A modeling study of the Upper Mississippi river basin. XIX International Conference on Computational Methods in Water Resources, U of Illinois, June 17-21, 2012.
- Flores Cervantes J.H.**, E. Istanbuluoglu; R. L. Bras (2011). A geomorphic perspective on the organization of vegetation productivity on the landscape illustrated in a semiarid climate in Southwestern United States. H31A-1122, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Yetemen O.**, J.H. Flores Cervantes, E. Istanbuluoglu, and E.R. Vivoni (2011). Modeling the role of solar radiation on catchment development in semi-arid ecosystems: Sensitivity analysis under variable climate and tectonic uplift. H31A-1126, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Zhou X.**, S. Fatichi, E. Istanbuluoglu, E.R. Vivoni (2011). Forecasting spatial plant dynamics under future climate change in a semiarid savanna ecosystem with complex topography. H31A-1130, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Mykleby P.**, J.D. Lenters; G.J. Cutrell; K. Herrman; E. Istanbuluoglu; D. Scott (2011). Water and Energy Balance in Response to the Removal of Invasive Phragmites Australis in a Riparian Wetland. H33D-1343, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- McGuire Elsner M.**, A.F. Hamlet, R. D. Woodsmith, J.S. Littell, and E. Istanbuluoglu (2011). The Effects of Soil Moisture Stress on Forest Recovery in the Entiat River Basin after Stand Replacing Fire. GC34A-05, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Akkaya Aslan S.T.**, E. Istanbuluoglu; K.S. Gundogdu, J.D. Lenters (2011). Examining the impact of depth to groundwater table on evapotranspiration in a semi-arid grassland region. H41E-1098, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Frans C.D.**, E. Istanbuluoglu; V. Mishra; F. Munoz-Arriola; D.P. Lettenmaier (2011). Examining the role of climate and land use change on hydrologic trends in the Upper Mississippi River Basin. H43I-1349, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Naz B.S.**, C.D. Frans; G.K. Clarke, A.W. Nolin, D.P. Lettenmaier, E. Istanbuluoglu, P.J. Burns (2011). Application of spatially distributed coupled glacio-hydrological model to predict the effect of glacier recession on the flow of the Upper Bow River, Alberta, Canada. C53D-0712, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Soylu M.E.**, J.D. Lenters, E. Istanbuluoglu (2011). On Evapotranspiration and Shallow Groundwater Fluctuations: A Fourier-Based Improvement to the White Method and the Role of Specific Yield Under Saturated Conditions. H54F-03, *AGU fall meeting*, Dec. 2011, San Francisco, CA.
- Francipane A.**, Valeriy Ivanov, Leonardo V. Noto, and Erkan Istanbuluoglu (2011). tRIBS-Erosion: combining mechanistic approaches for investigating eco-hydro-geomorphic

- response of river basins to climate change. *European Geophysical Union (EGU) General Assembly*, Vienna, Austria.
- Istanbuluoglu E.**, T. Wang, and D.A. Wedin (2010). Evaluation of Ecohydrologic Model Parsimony at Local and Regional Scales in a Semiarid Grassland Ecosystem. *AGU fall meeting*, Dec. 2010, San Francisco, CA.
- Wright O.M.**, E. Istanbuluoglu, and T. Wang (2010). A new interpretation of the Budyko Framework: The role of groundwater storage and streamflow persistence. *AGU fall meeting*, Dec. 2010, San Francisco, CA.
- Flores-Cervantes H.**, E. Istanbuluoglu, and RL Bras (2010). Effects of Terrain-modulated Radiation and Moisture Convergence on Grass Dynamics in a Semiarid Highly Seasonal Climate: Data Analysis and Numerical Model Experiments. *AGU fall meeting*, Dec. 2010, San Francisco, CA.
- Istanbuluoglu E.**, and J. H. Flores-Cervantes (2010). The Role of Solar Radiation as a Driver of Eco-geomorphic Feedbacks and Landscape Evolution. *AGU fall meeting*, Dec. 2010, San Francisco, CA (Invited).
- Yetemen, O.**, Flores-Cervantes, J.H., Istanbuluoglu, E. and Vivoni, E.R. 2010. Investigating the role of climate change during the late Pleistocene on landscape evolution: a case study from New Mexico, USA. *AGU Fall Meeting*, San Francisco, CA.
- Frans C., F.** Munoz-Arriola, E. Istanbuluoglu., D.P. Lettenmaier (2011). Impacts of variable agricultural extensification on regional-scale hydrology: the case of the Mississippi. *American Meteorological Society Meeting*, Jan. 2011, Seattle, WA.
- Frans C., F.** Munoz-Arriola, E. Istanbuluoglu., D.P. Lettenmaier (2010). Impacts of variable agricultural expansion and contraction on regional scale hydrology: The case of the Upper Mississippi River and Ohio River Basins. *AGU fall meeting*, Dec. 2010, San Francisco, CA.
- Zhou X**, and E. Istanbuluoglu (2010). Evaluating the role of vegetation dynamics and complex topography on land surface fluxes using a tree-shrub-grass competition model in a semiarid landscape. *American Meteorological Society Meeting*, Jan. 2010, Seattle, WA.
- Zhou X**, and E. Istanbuluoglu (2010). A tree-shrub-grass competition model and its evaluation in a semiarid savanna landscape with complex morphology, *AGU fall meeting*, Dec. 2010, San Francisco, CA (**outstanding student paper award**).
- Istanbuluoglu E.**, and X Zhou “Assessing the impact of climate change on an aspect and elevation controlled semiarid ecosystem using a tree-shrub-grass competition model: The role of local interactions on global outcomes.” *AGU Meeting of the Americas*, Igassu Falls, Brazil, August 10, 2010 (Invited).
- Istanbuluoglu E.**, J. Lundquist, J. Lutz, and T. Wang (2010). Modeling the Impact of Forest Harvesting and Regrowth in a Snowmelt Dominated Basin in the Pacific Northwest, UCOWR/NIWR Annual Conference, July 13-15, 2010, Seattle, WA.
- Istanbuluoglu E.**, and D. Wedin “Toward a Parsimonious Ecohydrological Vegetation Dynamics Model for Predicting the Impacts of Climate on Landscape Evolution”, *AGU Fall Meeting*, Dec. 2009 (Invited).
- Soylu, E.**, T.J. Wang, E. Istanbuluoglu, and J. Lenters. “Quantify the impact of groundwater depth on evapotranspiration in a semi arid grassland region”. *AGU, Fall Meeting*, December 2009, San Francisco CA.
- Francipane, A., **V. Ivanov**, E. Istanbuluoglu, and V. Notto. “A coupled eco-hydro-geomorphic investigation of basin response to climate change: Examining the role of climate on internal basin dynamics”. *AGU, Fall Meeting*, December 2009, San Francisco CA.
- Gutierrez-Jurado H.**, E. Vivoni, R.L. Bras, C. Cikoski, B. Harrison, E. Istanbuluoglu. On the Observed Ecohydrologic Dynamics of a Semiarid Catchment with Topographic Induced Microclimatic Controls. *AGU, Fall Meeting*, December 2009, San Francisco CA.
- Yetemen O., **E. Istanbuluoglu**, and E.R. Vivoni. The Implications of Geology, Soils, and Vegetation on Landscape Morphology: Inferences from Semiarid Basins with Complex

- Vegetation Patterns in Central New Mexico, USA. *2009 Binghamton International Geomorphology Symposium*, Blacksburg, VA, October 2009 (Invited).
- Walters S.**, K. Herrman, D. Scott, E. Istanbuluoglu, J. Lenters, and S. Thomas. "Carbon dynamics in a *Phragmites australis* invaded wetland in south-central Nebraska". *Platte River Symposium*, Kearney, NE, Oct 14-15, 2009.
- Istanbuluoglu E.** "Water Balance and the Hurst Phenomenon", *MIT Symposium in honor of Rafael L. Bras*, Cambridge MA, March 29-30, 2009.
- Wang T.**, E. Istanbuluoglu, and J. Lenters. "Evaluation of the roles of groundwater and vegetation in basin water balance using the Budyko hypothesis". *AGU, Fall Meeting*, Dec. 2008, San Francisco, CA.
- Francipane A.**, V. Ivanov, Y Akutina, V. Noto, and E. Istanbuluoglu. "Combining Mechanistic Approaches for Studying Eco-Hydro-Geomorphic Coupling". *AGU, Fall Meeting*, Dec. 2008, San Francisco, CA.
- Istanbuluoglu E.**, T. Wang, and J.D. Lenters. On Basin Residence Time and Annual Hydrology: Development of Annual Hydrology Model of the Sandhills Rivers, *2008 Water Colloquium*, University of Nebraska, Lincoln, October 2008.
- Istanbuluoglu E.**, O. Yetemen, E.R. Vivoni, H.A. Gutierrez-Jurado, and R.L. Bras. "Influence of hillslope aspect on landscape evolution: Inferences from analysis of landscape morphology in central New Mexico". *AGU Hydrology Days*, March 2008, Fort Collins, CO.
- Yetemen O.**, E. Istanbuluoglu, and E.R. Vivoni. "Topographic Analysis of Landscape Morphology and Vegetation Patterns in a Semiarid Basin in Central New Mexico". *AGU, Fall Meeting*, Dec. 2007, San Francisco, CA.
- Tucker G.E.**, L.J. Arnold, R.L. Bras, H. Flores-Cervantes, E. Istanbuluoglu, P.B. Solyom, V. Winchester. "Origins of episodicity in arroyo formation and development: Evidence from the Colorado High Plains". *GSA Meeting*, 2007, Denver, CO.
- Istanbuluoglu, E.**, O. Yetemen, and E.R. Vivoni. "On the long-term control of vegetation on landforms". *AGU Hydrology Days*, March 2007, Fort Collins, CO.
- Istanbuluoglu E.**, E.R. Vivoni, H. Gutierrez-Jurado, and R.L. Bras. "On the topographic imprint of vegetation: Results from field observations and DEM analysis of small semiarid basins". *AGU, Fall Meeting*, Dec. 2006, San Francisco, CA.
- Istanbuluoglu E.**, K. Gill, D. Wedin, and S. Irmak. "Influence of Hydro-climatologic Fluctuations on Water Balance and Grassland Dynamics". *2006 Water Colloquium*, University of Nebraska, Lincoln, October 2006.
- Tarolli P.**, E Istanbuluoglu, and G. Dalla Fontana (2006). "Linking the topography signature of LIDAR-derived vegetation types and geomorphic processes as preliminary steps in integrating landscape evolution with vegetation dynamics". *AGU, Fall Meeting*, Dec. 2006, San Francisco.
- Gutierrez-Hurado H.**, E. Vivoni, B. Harrison, P. Turner, G. Bisht, E. Istanbuluoglu, and R.L. Bras (2006). Analysis of an extreme monsoon event on the ecohydrologic and geomorphologic conditions in a semiarid basin based on field instrumentation and reconnaissance. *AGU, Fall Meeting*, Dec. 2006, San Francisco.
- Istanbuluoglu E.**, and R.L. Bras (2005). "Landscape response to climate forcing: a fully coupled Eco-Hydro-Geomorphic modeling approach", *AGU, Fall Meeting*, Dec. 2005, San Francisco (Invited).
- Istanbuluoglu E.**, E.R. Vivoni, V. Ivanov, and R.L. Bras. "Comprehensive Representation of Hydrologic and Geomorphic Process Coupling in Numerical Models: Internal Dynamics and Basin Evolution", *AGU, Fall Meeting*, Dec. 2005, San Francisco (Invited).
- Istanbuluoglu E.**, and R.L. Bras. "Vegetation-Modulated Landscape Evolution" The Third Princeton-CNR Workshop "*New Frontiers in Hydrology*", Princeton University, Princeton, NJ, May, 2005.

- Istanbuluoglu E.**, and R.L. Bras. “On the Dynamics of Soil Moisture Vegetation and Erosion: Implications of Stochastic Climate Forcing”, *AGU, Fall Meeting*, Dec. 2004, San Francisco.
- Ivanov, V.Y.**, R.L. Bras, E. Istanbuluoglu, and E.R. Vivoni. “Aspects of Radiation Budget, Subsurface Lateral Moisture Exchange, and Vegetation Function in Areas of Complex Topography”, *AGU, Fall Meeting*, Dec. 2004, San Francisco.
- Bras R.L.**, and E. Istanbuluoglu. “Vegetation Modulated Landscape Evolution: Effects of Vegetation on Landscape Processes, Drainage Density and Topography”, *AGU, Fall Meeting*, Dec. 2004, San Francisco.
- Flores Cervantes, J. H.**, E. Istanbuluoglu, and R.L. Bras (2004). The Development of Gullies on the Landscape: A Model of Headcut Retreat Resulting From Plunge Pool Erosion, *AGU, Fall Meeting*, Dec. 2004, San Francisco.
- Tucker G. E.**, L. Arnold, R. Bras, D. Collins, H. Flores, E. Istanbuluoglu, S. Stokes, and V. Winchester. Chronology and Dynamics of Gully Development, Fort Carson and Pinon Canyon Maneuver Site, Colorado, *ARO. Workshop*, 2004 Zzyzx, California.
- Istanbuluoglu E.**, H. Flores, R. L. Bras and G. E. Tucker. “Modeling the Implications of Fluvial Erosion and Bank Failures on Gully Development and Growth”, *AGU, Fall Meeting*, Dec. 2003, San Francisco.
- Falorni G.**, E. Istanbuluoglu, and R. L. Bras. “A Method for Improving SRTM DEMs in High-Relief Terrain”, *AGU, Fall Meeting*, Dec. 2003, San Francisco.
- Vivoni E. R.**, E. Istanbuluoglu, and R. L. Bras. “Coupling Catchment Hydrology and Landscape Evolution: Interactive Effects on Hydrograph and Basin Shape”, *AGU, Fall Meeting*, Dec. 2003, San Francisco.
- Tarboton D., **E. Istanbuluoglu**, R. Pack, and C. Luce. “A Modeling Study on The Effects of Vegetation Disturbances on Episodic Sediment Delivery”, *AGU, Fall Meeting*, Dec. 2003, San Francisco.
- Istanbuluoglu, E.**, D. G. Tarboton, R. T. Pack and C. H. Luce. (2002) Sediment Transport in Gullies on Steep Topography: Theory and Observations. *GSA Meeting*, Denver, Colorado, October 27-30, 2002 (Invited).
- Istanbuluoglu, E.**, D. G. Tarboton and R. T. Pack. (2001). A Sediment Transport Model for Incising Gullies Based On Upland Topographic Controls. *AGU, Fall Meeting*, Dec. 2001, San Francisco.
- Istanbuluoglu, E.**, D. G. Tarboton, R. Pack. (2001). Quantifying the Exposure of Streams to Sediment Inputs using Probabilistic Methods. *AGU Spring Meeting*, June 2001, Boston, MA.
- Istanbuluoglu E.**, H. Degirmenci, and S. Yazgan (1998). “A Mathematical Simulation Model Approach in Pre-Seasonal Irrigation Planning”. *CIGR 13th International Congress on Agricultural Engineering*, Feb., 1998, Rabat-Morocco .

Other

Referee for Journals: Water Resources Research, Science, Journal of American Water Resources Association, Proceedings of National Academy of Sciences, Geophysical Research Letters, Bioscience, Journal of Geophysical Research, Journal of Hydrology, Hydrological Processes, Geomorphology, Earth Surface Processes and Landforms, Computers and Geosciences, Forest Ecology and Management, Irrigation Science, Water International, Geoderma.

Referee for Funding Agencies: NSF-Geomorphology and Landuse Dynamics, NSF-Hydrology, NSF-Collaboration in Mathematical Geosciences, NSF-EAR postdoctoral fellowships, NSF-Geography and Spatial Sciences, NSF-software Infrastructure; Netherlands Organization for Science Research; Nebraska Natural Resources Commission. (~5-8 proposal reviews a year).

GRADUATE STUDENTS & POSTDOCS

Chaired/Current Doctoral Degrees:

Student Name	Level of Supervision	Thesis/Paper Title	Completed	Current Employer
Evren Soyly*	Dissertation Co-Chaired with John D. Lenters	Quantifying evapotranspiration and water table interactions in regions of shallow groundwater: Sensitivity to soil properties, vegetation, and climate variability.	Spring, 2011	Postdoc at the University of Wisconsin-Madison Center for Sustainability and the Global Environment
Omer Yetemen	Dissertation	Modeling the role of solar radiation on landscape development	2014	University of Saskatchewan
Chris Frans	Dissertation	Predicting the role of climate change on South American glaciated watersheds and the implications for regional water resources sustainability	2014 (expected)	UW CEE
Sai Nudurapati	Dissertation	Ecohydrologic Dynamics in a Component-Based Software Architecture for Landscape Modeling	2016 (expected)	UW CEE
Ronda Strauch	Dissertation	Climate change and regional landsliding	2016 (expected)	UW CEE

Chaired/Current Masters Degrees

Student Name	Level of Supervision	Thesis/Paper Title	Completed	Current Employer
Olivia M. Wright*	MS Thesis	Restoring the hydrologic response to pre-developed conditions in an urbanized headwater catchment: Reality or utopia	Winter, 2012	King County, WA
Xiaochi Zhou	MS Thesis	Modeling the impact of topography on tree, shrub, grass competition based on ecohydrological dynamics of semiarid climates	Spring, 2011	Duke University CEE
Chris Frans	MS Thesis	Influences of 20th century climate and land use change on the hydrology of the Upper Mississippi River Basin: 1918-2007.	Spring, 2011	UW CEE
Omer Yetemen	MS Thesis at the University of Nebraska, Lincoln (UNL)	Topographic analysis of landscape morphology in Central New Mexico: Influence of hillslope aspect, geology, and vegetation.	Spring, 2008	UW CEE

Postdocs and Visiting Scholars

Scholar Name	Topic	Duration
Dr. Christian Bandaragoda (Research Associate)	Glacio-hydrology modeling	Current
Dr. Gu Wenguan [§] (scholar)	Modeling macro-scale hydrology	08/2012-07/2013
Dr. Yung-Ling Huang [§] (scholar)	Landsliding in Taiwan	09/2012-08/2013
Dr. Yung-Feng Huang [§] (scholar)	The role of typhoons in hydro-geomorphologic response in Taiwan	09/2012-08/2013
Domenico Caracciolo [§] (visiting PhD candidate from Italy)	Predicting climate change impacts on vegetation coexistence in Sicilia, IT	09/2012-08/2013
Dr. Jianxia Chang [§] (scholar)	Yellow River Hydrology, China	6 months in 2012
Dr. Yimin Wang [§] (scholar)	Yellow River Hydrology, China	6 months in 2012
Dr. Homero Flores (postdoc)	Ecohydrology and Landscape Evolution Modeling	05/2010 – 08/2012
Dr. Tiejun Wang (postdoc)	Evapotranspiration and Groundwater relations	09/2008 – 10/2010

[§] Scholars funded by their home country.

Courses Taught

Currently:

CEE 476 Physical Hydrology

CEE 574 Advanced Hydrology

CEE 481 Hydraulic Modeling for Env. Eng.

Previously Taught:

Hydrology, Land and Water Dynamics, Geomorphology, and Statistical Methods in Hydrological Sciences at the University of Nebraska

List of other teaching contributions

Short Courses:

University of Palermo, Civil and Hydraulics Eng., Sicilia, Italy Analysis and Processing of DEMs for hydrological and surface energy budget applications: (Dec. 2011 and 2012).

University of Minnesota, National Center for Earth Dynamics (NCED) 2010 Summer Institute: “Rivers and Vegetation” August 18-27, 2010.

University of Tuscia, College of Agriculture, Viterbo, Italy, CNR-MIT Summer School on Climate Change and Hydrologic Disasters, (June 26-30, 2006

Polytechnic Institute of NYU, Summer School of The Honors Center of Italian Universities – H2CU. GIS Terrain Analysis for Hydrogeomorphic Applications (July 21-25, 2008).

Professional society and other service (sample)

Session Convener:

Ecogeomorphology: Footprints on a Landscape, AGU fall meeting, San Francisco, CA, 2012.

Landscape System Response Under Change, AGU fall meeting, San Francisco, CA 2011 and 2012.

Emerging Topics in Interdisciplinary Hydrology: Biogeochemistry, Ecology, and Geomorphology. AGU fall meeting, San Francisco 2010.

GIS Terrain Analysis for Hydrologic Applications, AGU fall meeting, San Francisco, 2008.

Community service:

Associate Editor, Water Resources Research

Committee member of the Ecohydrology Technical Subcommittee of the American Geophysical Union (AGU) Hydrology Section (2010 – 2012)

Deputy Chair of the Ecohydrology Technical Subcommittee of the American Geophysical Union (AGU) Hydrology Section (2013 – present)

AGU Natural Hazards Focus Group - Advisory Board Membership (2010-2012)

Hydrological Synthesis Group: I participate in the Hydrologic Synthesis group activities of University of Illinois, Urbana-Champaign in 2010/2011. I contributed (with 17 others), to a report to NSF: “Predictions under Change (PUC): Water, Earth and Biota in the Anthropocene”, editor Murugesu Sivapalan.

Faculty Advisor to the UW student chapter of the American Water Resources Association (2012-current).