Allison Goodwell

Assistant Professor, Department of Civil Engineering allison.goodwell@ucdenver.edu
University of Colorado Denver, 80204

EDUCATION

Ph.D. Civil Engineering, University of Illinois	GPA 4.0/4.0	2017
M.S. Civil Engineering, University of Illinois	GPA 4.0/4.0	2013
B.S. Civil Engineering, Purdue University, IN	GPA 3.9/4.0	2010

HONORS, AWARDS, AND FELLOWSHIPS

Creative Research Collaborative (CRC) Fellow, CU Denver 2018
University Council on Water Resources (UCOWR) Dissertation Honorable Mention 2018
NASA Earth and Space Science Fellow 2015-2017
Illinois CEE PhD Professional Development Certificate 2016
NSF Graduate Research Fellowship Honorable Mention 2012, 2013
SURGE Fellowship, University of Illinois at Urbana-Champaign 2012-2016
Carver Fellowship, University of Illinois at Urbana-Champaign 2011
Outstanding Civil Engineering Senior Award, Purdue University 2010

RESEARCH POSITIONS

Postdoctoral Researcher, University of Illinois 2017
Intensively Managed Landscape Critical Zone Observatory (IML-CZO) project

Graduate Research Assistant, University of Illinois 2011-2017
Resilience under Accelerated Change (REACH), Minnesota River Basin project
Intensively Managed Landscape Critical Zone Observatory (IML-CZO) project
Dissertation: Temporal Information Partitioning Networks to infer ecohydrologic behaviors
Masters Thesis: Assessment of floodplain vulnerability during extreme Mississippi River Flood 2011
Advisor: Praveen Kumar

Summer Undergraduate Research Fellowship, Purdue University 2010
Topic: Analysis of coastal upwelling events in southern Lake Michigan
Advisor: Cary Troy

TEACHING

Assistant Tenure-Track Professor, CU Denver 2018-current
CVEN 2200: Computational Methods for Civil Engineers
CVEN 5407: Complex Systems Methods
CVEN 5464: Sustainability and Climate Change

Distinguished Teaching Assistant 2014-2015
CEE 202: Risk and Uncertainty for Civil Engineers
Graduate Teacher Certificate, Center for Innovation in Teaching 2016

Graduate Mentor for Research Experience for Undergraduates (REU) 2013-2014
Purdue Women in Engineering Program (WIEP) tutor 2008-2010

SERVICE

American Geophysical Union (AGU) Hydrology Section

Session Primary Convener: Session H053. *Better Informed than Uncertain: Applications of Information Theory in the Earth Sciences Posters*	2018
Technical Committee on Hydrologic Uncertainty, member	2017-2019
Hydrology Section Student Subcommittee (H3S), member	2016-2017
CEE Graduate Student Advisory Council (GSAC), University of Illinois	2013-2015
UIUC International Water Resources Association (IWRA)	
President of Student Chapter	2012-13
Newsletter and Social Chair	2013-2015
Purdue Society of Women Engineers (SWE)	
Executive Board Member	2007-2010

PUBLICATIONS

*Since 2014, see Google Scholar for complete list of publications and presentations

Goodwell, A. (2020) *It's raining bits: Patterns in directional precipitation persistence across the U.S.* In revision for Journal of Hydrometeorology, Aug. 2020

Franzen, S., **Goodwell, A.** (2020) *Information flows: Characterizing precipitation-streamflow dependencies in the Colorado Headwaters with an information theory approach.* In revision for WRR, May 2020

Goodwell, A., Jiang, P., Ruddell, B., Kumar, P. (2020) *Debates - Does Information Theory provide a new paradigm for Earth science? Identifying causality, interaction, and feedback. WRR, Volume 56, DOI:* 10.1029/2019WR024940

Goodwell, A., Kumar, P. (2019) *A changing climatology of rainfall persistence using information-based measures*. Journal of Hydrometeorology, DOI: 10.1175/JHM-D-19-0013.1

Wilson, C., …, **Goodwell, A.,** et al (2018) *The Intensively Managed Landscape Critical Zone Observatory: A scientific testbed for understanding critical zone processes in agroecosystems.* Vadose Zone Journal, DOI: 10.2136/vzj2018.04.0088

Goodwell, A., Kumar, P., Fellows, A., Flerchinger, G. (2018) *Process connectivity explains ecohydrologic responses to rainfall pulses and drought.* PNAS, 201800236, DOI: 10.1073/pnas.1800236115

Goodwell, A., Kumar, P. (2017) *Temporal Information Partition Networks (TIPNets): A process network approach to infer ecohydrologic shifts*. WRR, Volume 53, pp. 5899-5919, DOI: 10.1002/2016WR020218

Goodwell, A., Kumar, P. (2017) *Temporal Information Partitioning: Characterizing synergy, redundancy, and uniqueness in interacting environmental variables*. WRR, Volume 53, pp. 5920-5942, DOI: 10.1002/2016WR020216

Dutta, D., Wang, K., Lee, E., **Goodwell, A.**, Wagner, D., and Kumar, P. (2016) *Characterizing Vegetation Canopy Structure using Airborne Remote Sensing Data*, IEEE Trans. in Geoscience and Remote Sensing, Issue 99, Nov. 2016, DOI: 10.1109/TGRS.2016.2620478

William, R., **Goodwell, A.**, Richardson, M., Le, P., Stillwell, A., Kumar, P. (2016) *An environmental cost-benefit analysis of alternative green roofing strategies.* Ecological Engineering, Volume 95, pp. 1–9, 2016, DOI: 10.1016/j.ecoleng.2016.06.091

Goodwell, A., Kumar, P. (2015) *Information theoretic measures to infer feedback dynamics in coupled logistic networks.* Entropy, Volume 17, pp. 7468-7492, DOI: 10.3390/e17117468

Plale, B., Kouper, I., Suriarchchi, I., **Goodwell, A.** (2015) *Thread of Trust: Big Data and Science.* Book chapter in Big Data is Not a Monolith, edited by Cassidy R. Sugimoto, Hamid R. Ekbia, and Michael Mattioli. The MIT Press, Cambridge Massachusetts

Dutta, D., **Goodwell, A.**, Greenberg, J., Kumar, P., Garvey, J., Darmody, R., Berretta, D. (2014) *On the feasibility of characterizing soil properties from AVIRIS spectrometer data* (2015) IEEE Transactions on Geoscience and Remote Sensing, Volume 53, Issue 9, 10.1109/TGRS.2015.2417547