

JENNIFER M. JACOBS

a. Professional Preparation

Brown University Electrical Engineering 1987 B.S.

Tufts University Civil Engineering 1993 M.S.

Cornell University Civil and Environmental Engineering 1997 Ph.D.

b. Appointments

- Professor, Univ. of New Hampshire, Dept. of Civil Engineering (2011 to present)
- Director, Infrastructure and Climate Network (ICNet – theICNet.org) (2012 to present)
- Director, Environmental Research Group, Univ. of New Hampshire (2010 to 2012)
- Assoc. Professor, Univ. of New Hampshire, Dept. of Civil Engineering (2005 to 2011)
- Asst. Professor, Univ. of New Hampshire, Dept. of Civil Engineering (2003 to 2005)
- Assoc. Professor. Univ. of Florida, Dept. of Civil and Coastal Engineering (2004)
- Asst. Professor. Univ. of Florida, Dept. of Civil and Coastal Engineering (1997 to 2003)
- NASA Goddard Space Flight Center Graduate Student Research Fellow (1994-1997)
- Environmental Consultant. Eastern Research Group, Lexington, MA (1989-1993)
- Consultant. Boston Systems Group, Boston, MA (1987-1989)

c. Selected publications

(i) 5 Products most closely related to the proposed project (* indicates Jacobs graduate student)

- Vuyovich*, C., J.M Jacobs and S.F. Daly. 2014. Comparison of passive microwave and SNODAS estimates of total watershed SWE in the continental U.S. *Water Resources Research*. doi: 10.1002/2013WR014734.
- Vuyovich*, C. and J.M. Jacobs. 2011. Snowpack and runoff generation using AMSR-E passive microwave observations in the Upper Helmand Watershed, Afghanistan. *Remote Sensing of Environment*. doi:10.1016/j.rse.2011.07.014. 115 (12). 3313-3321.
- Jacobs, J.M. E. Hsu*, and M. Choi*. 2010. Electronically Scanned Thinned Array Radiometer (ESTAR) soil moisture characterization during Southern Great Plains (SGP) hydrology experiments. *Hydrologic Processes*. DOI: 10.1002/hyp.7703.
- Choi*, M., J.M. Jacobs, and D.D. Bosch. 2008. Remote sensing observatory validation of surface soil moisture using Advanced Microwave Scanning Radiometer E, Common Land Model and ground base data: Case study in SMEX03 Little River, Georgia, U.S. *Water Resources Research*. 44, W08421, doi:10.1029/2006WR005578.
- Choi*, M. and J.M. Jacobs. 2011. Soil moisture structure for different topographies during Soil Moisture Experiment 2005 (SMEX05). *Hydrological Processes*. 25(6). 926-932.

(ii) Other Related Products

- Daniel, J.S., J.M. Jacobs, E. Douglas, R.B. Mallick, and K. Hayhoe. 2014. Impact of Climate Change on Pavement Performance: Preliminary Lessons Learned through the Infrastructure and Climate Network (ICNet). *Climate Effects on Pavement and Geotechnical Infrastructure*. 1-9. DOI: 10.1061/9780784413326.001.
- Mallick, R., M. Tao, J. Daniel, J.M. Jacobs, and A. Veeraragavan. 2014. Development of a Methodology and a Tool for the Assessment of Vulnerability of Roadways to Flood Induced Damage. *Journal of Flood Risk Management*. doi: 10.1111/jfr3.12135.
- Mallick, R.B., M.J. Radzicki, J.S. Daniel, and J.M. Jacobs. Use of System Dynamics to Understand the Long Term Impact of Climate Change on Pavement Performance and Maintenance Cost. *TRB Research Record: Journal of Transportation Research Board*. Accepted for publication. October 2013.

- Loescher, H., J.M. Jacobs, O. Wendroth, D.A Robinson., G.S. Poulos, K. McGuire, P. Reed, B.P. Mohanty, J.B. Shanley, and W. Krajewski. 2007. Enhancing water cycle measurements for future hydrologic research. *Bulletin of the American Meteorological Society*, DOI:10.1175/BAMS-88-5-669.

d. Synergistic Activities

- PI NSF RCN-SEES: Engineering Research Collaboratory for Sustainable Infrastructure (ICNet; theICNet.org) in a Changing Climate 2012 to present; NASA EPSCoR Science PI Passive Microwave Detection of Snowmelt and Runoff 2011 to present.; "Satellite Enhanced Snowmelt Flood Predictions in the Red River of the North Basin" funded by the NASA Water Resources Applications Program (NNX15AC47G) 2015 to present.
- Field Experience: NASA large-scale field experiments: Soil Moisture Experiment SMEX 2002 (Ames, IA), 2003 (Tifton, GA), and 2005 (Ames, IA). Snow experiment studies including the Hubbard Brook Experimental Forest, NH and Red River of the North Basin, ND. Watershed studies including the HBEF, NH, Suwannee River, FL, Fort Benning, GA, Souhegan River, NH, Wednesday Hill Brook, NH and Lamprey River, NH. Evapotranspiration experiments: PSREU, FL (grass and cotton), Citra, FL (citrus), Paynes Prairie, FL (wetlands), Columbus, GA (cotton and peanuts), and Bunnell, FL (sod).
- Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI), *Executive Committee Member*, 2010 to 2012, *Board of Directors*, 2008 to 2012, Hydrologic Measurement Facility Committee, *Member*, 2003 to 2010, Water Cycle White Paper Committee, *Chairperson*, 2005-2006.
- Panel Member, Proposal and Manuscript Reviewer – NSF, NASA, USGS; Water Resources Research, *Journal of Hydrometeorology*, *EOS Transactions*, *AGU*, *Journal of Geophysical Research*, *Hydrological Sciences Journal*, *Hydrological Processes*, *Journal of Hydrologic Engineering*, *Journal of Irrigation and Drainage*, and *Journal of American Water Resources Association*, *Vadose Zone Journal*, *Associate Editor*, 2008 to 2011.

e. Collaborators and Other Affiliations

Collaborators (Past four years): M. Anderson, USDA, , T. Ballesterro, UNH, C. Bolster, USDA, D. Bosch, USDA, P. de Alba, UNH, F. Chen, NCAR, M. Choi, Hanyang University, M. Cosh, USDA, J. Daniel, UNH, E. Douglas, University of Massachusetts, S. Daly, USACE, H. Einstein, MIT, X. Jia, North Dakota State University, J. Judge, University of Florida, J. Kartez, University of Southern Maine, P. Kirshen, UNH, W. Kustas, USDA, E. Linder, UNH, R. Lowrance, USDA, V. Lakshmi, University of South Carolina, H. Loescher, NEON, W. McDowell, UNH, J. Mecikalski, University of Alabama, B. Mohanty, Texas A&M, R. Roseen, UNH, D. Sumner, USGS, R. Vogel, Tufts University, C. Vorosmarty, CCNY, C. Vuyovich, USACE, A. Watts, UNH, R. Williams, USDA, W. Wolheim, UNH.

Graduate Advisors: W. Brutsaert, Cornell University (Ph.D.), R. Vogel, Tufts University (M.S.)

Thesis Advisor and Postgraduate-Scholar Sponsor

Postgraduate Scholar (4): E. Cooper-Smith, S. Tuttle, Xinhua Jia, Associate. Professor, University of North Dakota, Suat Irmak, Associate Professor, University of Nebraska

Ph.D. Students (8): S. Bhat, H. Chen, E. Cho, M. Choi, R. Flynn, A. Guha, J. Knott, R. Ray, and C. Vuyovich.

M.S. Students (27): J. Belanger, K. Boupfa, L. Bryant, B. Carignan, M. Fischer, A. Goldman, C. Grabe, A. Hunsaker, C. Howerton, G. Lemay, B. Lowry, L. Mather, M. Meagher, B. Miller, D. Osborne, G. Ripo, E. Romesser, S. Satti, J. Sherrard, D. Truslow, C. Vuyovich, M. Wang, L. Wang, B. Whitfield, S. Ramasundaram (Co-chair), F. Masters (Co-chair).