

PROFESSIONAL PREPARATION

Ph.D. University of California at Los Angeles, 2010, Civil Engineering
M.S. University of California at Berkeley, 1999, Civil and Environmental Engineering
B.S. University of Virginia, 1998, Civil Engineering

APPOINTMENTS

Associate Professor, 2018 – present	Civil and Environmental Engineering, University of Maryland
Assistant Professor, 2012 – 2018	Civil and Environmental Engineering, University of Maryland
Postdoctoral Fellow, 2010 – 2011	NASA Goddard Space Flight Center
Research Assistant, 2005 – 2010	Civil Engineering, University of California at Los Angeles
Staff Engineer, 1999 – 2004	United Research Services (URS) Corporation

RESEARCH INTERESTS

Hydrology, hydrometeorology, snow and land surface modeling, satellite-based remote sensing, hydrologic data assimilation, artificial intelligence and machine learning applications

AWARDS

Fulbright-Nehru Scholar in India, 2019-2020; NASA High Mountain Asia Science Team (HiMAT), 2016; NASA GRACE-FO Science Team, 2016; Kent Teaching Award for Outstanding Junior Faculty, 2015; NASA New Investigator Program Award, 2014; NASA Postdoctoral Fellowship, 2010; UCLA Edward K. Rice Engineering Ph.D. Student of the Year, 2010; UCLA Outstanding Civil Engineering Ph.D. Student of the Year, 2010; American Geophysical Union Outstanding Student Paper Award, 2009, 2008, and 2007; NASA Earth System Science Graduate Fellowship, 2007;

FIVE RELEVANT PUBLICATIONS

1. **Forman, B. A.**, M. Rodell, and R. H. Reichle (2012), Assimilation of terrestrial water storage from GRACE in a snow-dominated basin, *Water Resour. Res.* 48, W01507, doi:10.1029/2011WR011239.
2. **Forman, B. A.** and R. H. Reichle (2013). The spatial scale of model errors and assimilated measurements in a terrestrial water storage assimilation system, *Water Resour. Res.* 49, doi:10.1002/2012WR012885.
3. **Forman, B. A.** and R. H. Reichle (2014), Using a support vector machine and a land surface model to estimate large-scale passive microwave brightness temperatures over snow-covered land in North America, *IEEE J. Selected Topics Applied Earth Obs. Remote Sens.*, doi:10.1109/JSTARS.2014.2325780.
4. Xue, Y.*, and **B. A. Forman** (2015), Comparison of passive microwave brightness temperature prediction sensitivities over snow-covered land in North America using machine learning algorithms and the Advanced Microwave Scanning Radiometer, *Remote Sens. Environ.* 170: 15365. doi:10.1016/j.rse.2015.09.009.
5. Xue, Y.*, **B. A. Forman**, and R. H. Reichle (2018). Estimating snow mass in North America through assimilation of AMSR-E brightness temperature observations using the Catchment land surface model and support vector machines, *Water Resources Research*, 54, 1–22, doi: 10.1029/2017wr022219.

*Graduate Student Advisee

FIVE OTHER PUBLICATIONS OF INTEREST

1. **Forman, B. A.**, and S. A. Margulis (2010b), Assimilation of multiresolution radiation products into a downwelling surface radiation model Part II: Posterior ensemble implementation, *J. Geophys. Res.*, 115, D22116, doi:10.1029/2010JD013950.
2. Reichle, R. H., G. J. M. De Lannoy, **B. A. Forman**, C. S. Draper, and Q. Liu (2013), Connecting Satellite Observations with Water Cycle Variables Through Land Data Assimilation: Examples Using the NASA GEOS-5 LDAS, *Surv. Geophys.*, doi:10.1007/s10712-013-9220-8.
3. **Forman, B. A.**, R. H. Reichle, and C. Derksen (2013), Estimating passive microwave brightness temperature over snow-covered land in North America using a land surface model and an artificial neural network, *IEEE T. Geosci. Remote*, doi:10.1109/TGRS.2013.2237913.
4. **Forman, B. A.** and Y. Xue* (2016). Machine learning predictions of passive microwave brightness temperature over snow-covered land using the Special Sensor Microwave Imager (SSM/I), *Physical Geography*, 37: 1–21, doi:10.1080/02723646.2016.1236606.
5. Tao, J., R. H. Reichle, R. Koster, **B. A. Forman**, and Y. Xue* (2017). Evaluation and enhancement of permafrost modeling with the NASA Catchment Land Surface Model, *Journal of Advances in Modeling Earth Systems*, 10.1002/2017MS001019. doi:10.1002/2017MS001019.

SYNERGISTIC ACTIVITIES AND SERVICE

1. Member, Remote Sensing Technical Committee, American Geophysical Union, 2013 – present
2. Session Chair, “Hydrologic Data Assimilation” for AGU Fall Conferences, 2012 – 2018
3. Member, NASA Applied Sciences – Water Resources Review Panel, 2013, 2014, 2016, 2018
4. Member, NASA Terrestrial Hydrology Review Panel, 2014
5. Member, NASA National Climate Assessment Indicators Review Panel, 2015

COLLABORATORS AND OTHER AFFILIATIONS

Collaborators:

Anthony Ardennt (U. Washington), Ludovic Brucker (NASA GSFC), Kimberly Casey (USGS), Bora Cetin (Iowa State), Leon Clarke (JGCRI), Gabrielle De Lannoy (Leuven University), Chris Derksen (Environment Canada), Ethan Gutmann (NCAR), Matthew Hansen (UMD), Mohamad Hejazi (JGCRI), Paul Houser (George Mason), Edward Kim (NASA GSFC), Randy Koster (NASA GSFC), Sujay Kumar (NASA GSFC), Qing Liu (NASA GSFC), Jessica Lundquist (U. Washington), Fernando Miralles-Wilhelm (ESSIC), Viviana Maggioni (George Mason), Steven Margulis (UCLA), Lars Olson (UMD), Rolf Reichle (NASA GSFC), Matt Rodell (NASA GSFC), Charles Schwartz (UMD), Enrique Vivoni (Arizona State), Ben Zaitchik (Johns Hopkins)

Graduate and Postdoctoral Advisors:

Steven Margulis (graduate advisor at UCLA), Rolf Reichle (postdoctoral mentor at NASA GSFC)

Thesis and Postdoctoral Advisees:

Jawairia Ahmad (UMD), Dr. Yonghwan Kwon (UMD), Lu Liu (UMD), Jongmin Park (UMD), Meghan Ryan (UMD), Dr. Jing Tao (ESSIC), Jing Wang (UMD), Yuan Xue (UMD), Gaohong Yin (UMD)

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