

## Biographical Sketch - Ying Fan Reinfelder

Assistant Professor

Department of Earth and Planetary Sciences, Department of Environmental Sciences, Rutgers University  
(732) 932-9800 x6212, [yingfan@rci.rutgers.edu](mailto:yingfan@rci.rutgers.edu)

### Professional Preparation

Beijing Institute of Civil Engineering, Beijing, China. Dept. Structural Engineering. B.S., 1986.  
University of Utah, Salt Lake City, UT. Dept. Geography. M.S., 1988.  
Utah State University, Logan, UT. Dept. Civil & Environmental Engineering. Ph.D., 1992.  
M.I.T., Cambridge, MA. Dept. Civil & Environmental Engineering, Postdoc. 1992 – 1994, 1996 – 1998.  
Princeton University, Princeton, NJ. Dept. Civil & Environmental Engineering. Postdoc, 1994 – 1996.

### Appointments

2005 – Present: Asst. Professor, Dept. of Geological Sciences, Dept. of Environmental Sciences, Rutgers  
1999 – 2004: Part-Time Lecturer, Dept. of Geological Sciences, Rutgers

### Publications (I publish under *Fan*)

#### 5 publications closely related to the proposed work:

- Fan, Y. and G. Miguez-Macho. A simple hydrologic framework for wetland reconstruction in earth system models, *Global Biogeochemical Cycles*, in review, 2008GB003375.
- Schaller, M., and Y. Fan. River basins as groundwater exporters and importers: Implications for water cycle and climate modeling. *J. of Geophysical Research*, in press. doi:10.1029/2008JD010636.
- Anyah, R., C. P. Weaver, G. Miguez-Macho, Y. Fan, and A. Robock. 2008. Incorporating water table dynamics in climate modeling: 3. Simulated groundwater influence on coupled land-atmosphere variability. *Journal of Geophysical Research*, 113, D07103, doi:10.1029/2007JD009087.
- Miguez-Macho, G., Y. Fan, C. P. Weaver, R. Walko, and A. Robock. 2007. Incorporating water table dynamics in climate modeling, 2. Formulation, validation, and simulations of soil moisture fields. *Journal of Geophysical Research*, 112, D13108, doi:10.1029/2006JD008112.
- Fan, Y., G. Miguez-Macho, C. P. Weaver, R. Walko, and A. Robock. 2007. Incorporating water table dynamics in climate modeling: 1. Water table observations and the equilibrium water table. *Journal of Geophysical Research*, 112, D10125, doi:10.1029/2006JD008111.

#### Other significant publications:

- Fan, Y., L. Toran, and R. Schlische. 2007. Groundwater flow and groundwater-stream interaction in fractured and dipping sedimentary rocks: Insights from numerical models. *Water Resources Research*, VOL. 43, W01409, doi:10.1029/2006WR004864.
- Fan, Y. and R. L. Bras. 1998. Analytical solutions to hillslope subsurface storm flow and saturation overland flow. *Water Resources Research*, 34(4): 921-927.
- Fan, Y., C. J. Duffy and D. S. Oliver, Jr. 1997. Density-driven groundwater flow in closed desert basins: Field investigations and numerical experiments. *Journal of Hydrology*, 196: 139-184.
- Fan, Y., E. F. Wood, M. L. Baeck and J. A. Smith. 1996. The fractional coverage of rainfall over a model grid: analyses of NEXRAD radar data over the Southern Plains. *Water Resources Research*, 32(9): 2787-2802.
- Fan, Y. and R. L. Bras. 1995. On the concept of a representative elementary area (REA) in catchment hydrology. *Hydrological Processes*, 9: 821-832.

## Synergistic Activities

Served on NSF Water-Carbon-Cycle panel in June 2006 and NASA Terrestrial Hydrology Program panel in January 2007; Reviewer of proposals to NSF, NASA, and USGS, and manuscripts for *Journal of Geophysical Research*, *Journal of Climate*, *Journal of Hydrometeorology*, *Water Resources Research*, *Advances in Water Resources*, and *The Hydrogeology Journal*.

CUAHSI (Consortium of Universities for Advancement of Hydrologic Sciences, Inc.) representative at Rutgers; Served on CUAHSI standing committee on Hydrologic Synthesis (principle author of whitepaper [http://www.cuahsi.org/publications/cuahsi\\_tech\\_rpt\\_5.pdf](http://www.cuahsi.org/publications/cuahsi_tech_rpt_5.pdf)); Invited attendant at CUAHSI-ESRI workshop in Redlands, December 2006, on HIS (Hydrologic Information System) groundwater.

Organized a regional workshop at Rutgers on groundwater in fractured rocks in the Mesozoic Rift Basins in North America, Nov 2004; Co-chaired a session at 2006 GSA meeting on fractured rock hydrogeology; Initiated a new MS program in Environmental Geosciences at Rutgers University to fulfill the needs of the state and industry for environmental professionals; Co-leading (with Ken Miller and Paul Falkowski) a carbon sequestration initiative in the Mid-Atlantic region.

Invited speaker at Fall-2006 and Fall-2007 AGU meeting on continental water cycle. Invited speaker at the NCAR/UCAR Junior Faculty Forum on Future Scientific Directions in Jul 2007. Invited speaker at CUAHSI Biennial Sciences Meeting in Boulder, CO, July 2008.

## Advisors and Students

### Graduate and Postdoctoral Advisors:

Christopher Duffy, Ph.D. advisor, Penn State University – Surface-groundwater interaction  
Rafael Bras, Postdoctoral mentor, M.I.T. – Hydrology, geomorphology, climate dynamics  
Eric Wood, Postdoctoral mentor, Princeton University – Continental hydrologic modeling

### Postdocs Advised:

Gonzalo Miguez-Macho, 2003-2005 – Incorporating water table dynamics in climate modeling: observations and simulations over North American continent.  
Richard Anyah, Postdoc, 2005-2007 – Groundwater control on soil moisture, ET, boundary layer structure and precipitation.  
Haibin Li, Postdoc, 2007-2008 – Groundwater control on wetland distribution and CH<sub>4</sub> flux.  
Elif Sertel, 2007-present – Groundwater control on soil moisture memory.

### Graduate Students Advised:

Mike Serfes, Ph.D., 2001-2005 – Arsenic mobilization and transport in fractured sedimentary rocks in Newark Basin: geophysical framework and biochemical pathways.  
Eric Roman, Ph.D., 2002-? – Conjunctive use of surface water and groundwater in NJ.  
Morgan Schaller, M.S., 2005-2007 – The importance of long-distance groundwater flow in river .  
Deniz Kustu, Ph.D., 2006-? – Observational evidence of groundwater pumping on stream flow in the High Plains.  
Anthony DeAngelis, Ph.D., 2008-? – Observational evidence of irrigation effect on regional precipitation in the High Plains

### Undergraduate Students Advised:

Bernice Rosenzweig, Geology Major, 2002 – Senior Honor Thesis: Groundwater pumping in the Kirkwood-Cohancy aquifers: effect on stream and wetland dynamics.  
Jennifer Small, Meteorology Major, 2003 – Cook Senior Honor Thesis: Drought frequency analysis in New Jersey using historical precipitation records and Palmer Drought Index.  
Neil Ramchandani, RU Aresty undergraduate scholar, 2008-future – Searching for published groundwater observations to establish a database on water table depth over the globe.