



Hydrogeology Division



# Geological Society of America’s Hydrogeology Division and the University of Arizona’s Department of Hydrology & Water Resources Presents the 2012 Birdsall-Dreiss Lecturer

Wednesday, January 25, 2012 • 4:00 PM • Harshbarger Building Room 206  
Refreshments @ 3:45

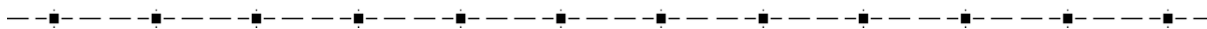


## James S. (Jay) Famiglietti

UC Center for Hydrologic Modeling  
Department of Earth System Science  
University of California, Irvine

James S. (Jay) Famiglietti has been selected as the 2012 Birdsall Dreiss Distinguished Lecturer. The lectureship is made to one person annually by the GSA Hydrogeology Division; Famiglietti is the 34rd GSA Birdsall-Dreiss Lecturer and is Professor in Earth System Science and Civil & Environmental Engineering and Director of the UC Center for Hydrologic Modeling.

His research group uses satellite remote sensing to track water availability and groundwater depletion on land, and has been working for many years towards improving hydrological prediction in regional and global weather and climate models.



## “Water Cycle Change and the Human Fingerprint on the Water Landscape of the 21<sup>st</sup> Century: Observations from a Decade of GRACE”

Over the last decade, satellite observations of Earth’s water cycle from NASA’s GRACE (Gravity Recovery and Climate Experiment) mission, have provided an unprecedented view of global hydrological change and freshwater availability. Since its launch, the mission has helped to confirm that precipitation, evaporation and continental discharge rates are increasing, that the mid-latitudes are drying while the high and low latitudes are moistening, and that the hydrologic extremes of flooding and drought are becoming even more extreme. Importantly, GRACE has exposed the human fingerprint of water management practices such as groundwater use and reservoir storage, which raises many important issues for climate, water, food and economic security. Moreover, the GRACE mission has enabled us to peer beneath Earth’s surface and characterize the worldwide depletion of groundwater aquifers, raising significant concerns about the potential for heightened conflict over transboundary water resources. In this talk I review the basics of how the GRACE mission observes terrestrial and global hydrology, what new information the mission has provided since its launch in 2002, and the implications for the future of water availability and sustainable water resources management.

## Background of the Birdsall-Dreiss Lectureship

**John Manning Birdsall**  
1902-1975



**Geologist**  
**Water Resources Division**  
**USGS**

**Shirley J. Dreiss**  
1949-1993



**Professor**  
**Dept. of Earth Sciences**  
**UC Santa Cruz**

The Birdsall Lectureship began in 1978, as part of a bequest left to the Geological Society of America – Hydrogeology Division in memory of John Manning Birdsall. Mr. Birdsall was a prominent geologist, retired from the Water Resources Division of the U.S. Geological Survey. He was a scientist, a dedicated public servant and a gentleman. The bequest was used to provide travel funds for outstanding scientists working in the field of hydrogeology to visit other institutions and give talks on their research. The first lecturer, Dr. Jacob Bear from the Israeli Institute of Technology, visited only the University of Wisconsin – Madison, which hosted one of the

premier hydrogeology programs of that era. The subsequent list of Birdsall-Dreiss lecturers includes many outstanding scientists from academia and government. The number of institutions visited by each lecturer grew rapidly, with recent lecturers typically giving 40 to 50 talks, mainly in the U.S. and Canada, but also in Europe, Asia and Australia.

One of the most popular Birdsall-Dreiss Lecturers was Dr. Shirley Dreiss from the University of California – Santa Cruz. Shortly after her very successful 1992 lecture tour, Shirley was killed in an auto accident. Her many friends and admirers honored her by contributing to the GSA Birdsall Lectureship, which was renamed the Birdsall-Dreiss Lectureship. The Birdsall-Dreiss Lecturer is chosen each year by a panel of former B-D lecturers. There are no applications for this position and they make their choice solely on the reputation of perspective candidates for their research excellence and ability to communicate.

The Birdsall-Dreiss endowment pays for part of their travel and candidates typically obtain additional travel funds from their home institution. Universities or other institutions wishing to host a Birdsall-Dreiss lecture send in their application in the fall, with the tour officially starting each January and ending at the fall meeting of the Geological Society of America.

### Previous Lectures

[Click here](#) to query the Birdsall-Dreiss Lectures Data Base. The data base includes year, lecturer, employer, and abstract title(s).