

# SALLY LYNN HOLL

2/31 Keynes Avenue • Warradale, South Australia 5046 • 0413-324-716 • sally.lynn@gmail.com

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## SUMMARY

Experienced GIS and science curriculum specialist with interests in hydrology, hydrogeology, project management, geospatial database development, field data collection, data analysis, proposal writing, and presentation skills.

## EXPERIENCE

### **FLINDERS UNIVERSITY, CHEMISTRY, PHYSICS & EARTH SCIENCES.**

#### **Hydrogeology Field Methods Demonstrator**, Earth Sciences Field Camp, 2009.

- Teach 25 students how to characterise fate and transport of high salinity groundwater in order to understand anthropogenic impacts on ecosystem health and develop more effective ecosystem management strategies.

### **U.S. GEOLOGICAL SURVEY, TEXAS WATER SCIENCE CENTER, AUSTIN.**

#### **Interdisciplinary Geographer**, 2007 – 2009.

- Integrate water, soil, and biota datasets from USGS, IBWC, and EPA within an ArcGIS-based weights of evidence-logistic regression model to identify impacts of contaminants on fish health for United States-Mexico Border Environmental Health Initiative (BEHI).
- Manage BEHI hydrology account funding totaling \$60,000 for six project staff.
- Deploy \$20,000 Data Rescue and Recovery project website: <http://txpub.usgs.gov/LTM>.
- Streamline production of river inundation maps and calculation of precipitation statistics by creating Python scripts for use with ArcGIS datasets.
- Build rainfall-runoff model input using HEC-GeoHMS and observed precipitation time series from storm events in urban Dallas, Texas.
- Author a \$100,000 water education proposal for the Texas Water Development Board.
- Collaborate with ten USGS scientists nationwide to create a \$500,000 carbon sequestration research proposal as part of the USGS Global Change initiative.
- Design spatially enabled databases using MS Access and ArcCatalog for BEHI biological field data collection and Data Rescue and Recovery project documents.

### **ROWLAND HIGH SCHOOL, ROWLAND HEIGHTS, CALIFORNIA.**

#### **Earth Science Teacher**, 2005 – 2007.

- Create and implement earth science and technology instruction for 175 students per day.
- Design and maintain an earth science class website: <http://sallyholl.com/science>.
- Network with the science community to host guest speakers and promote teacher training.
- Write successful proposals to provide \$5000 for student field trips and materials.

### **UNIVERSITY OF CALIFORNIA, IRVINE. EARTH SYSTEM SCIENCE DEPARTMENT.**

#### **Programmer/Analyst**, 2001 – 2004.

- Produce climate model forcing data for the NASA Seasonal to Inter-annual Prediction Project (NSIPP).
- Collect ground truth data for validation of satellite-based C-band microwave radiometer measurements: NASA-USDA joint Soil Moisture Experiment 2002.
- Develop Unix-based analytical programs with Fortran 77/90.
- Analyze hydrological and climatological time series and dynamical land surface model output.

### **UNIVERSITY OF TEXAS AT AUSTIN. DEPARTMENT OF GEOLOGICAL SCIENCES.**

#### **Teaching and Research Assistant**, 2000 – 2001.

- Manage classroom and field instruction for 50 students of introductory geological science.
- Produce self-directed research and computer programming for NSIPP.
- Write three successful grant proposals.

## EDUCATION

### **UNIVERSITY OF TEXAS AT AUSTIN.**

**M. Sc. Geological Sciences**, 2004. Majors: Hydrology, Hydrogeology.

### **OBERLIN COLLEGE.** Oberlin, Ohio.

**B. A. Geology and Musicology**, 1998.

### **CALIFORNIA STATE UNIVERSITY, FULLERTON.**

**Secondary Teaching Credential**, 2007. Subjects: Science and Music.

## PRESENTATIONS

“Data Rescue and Recovery: A prototype project to unlock more than 100 years of USGS data.” USGS Technical Session. Austin, Texas. January 2009.

“Data-Driven Detectives: Spatial Data Analysis Using Weights of Evidence and Weighted Logistic Regression.” Texas GIS Forum. Austin, Texas. October 2008.

“A semi-automated hydrologic unit naming method.” USGS 7<sup>th</sup> Biennial Geographic Information Science Workshop. Denver, Colorado. May 2008.

## AWARDS

Superior Performance Rating, U.S. Geological Survey, 2008.

STAR Award, U.S. Geological Survey, 2008.

Outstanding Teaching Assistant Award, UT Austin, 2001.

## **PUBLICATIONS**

- Holl, S. (2004), The sensitivity of land surface model simulations to bias reduction of ERA-15 downward radiation forcing, M.S. Thesis, University of Texas at Austin.
- Famiglietti, J.S., J. Chen, S. Holl, M. Rodell, K. Seo, T. Syed, and C.R. Wilson (2004), Terrestrial water storage variations using GRACE: Implications for water budget closure at multiple scales, in *Proceedings of the 2nd international CAHMDA workshop on: The Terrestrial Water Cycle: Modelling and Data Assimilation Across Catchment Scales*, edited by A.J. Teuling, H. Leijnse, P.A. Troch, J. Sheffield and E.F. Wood, pp. 14, Princeton, NJ, October 25–27.
- Berg A.A, J.S. Famiglietti, M. Rodell, U. Jambor, S. Holl, R.H. Reichle, and P.R. Houser (2005), 'Development of a Hydrometeorological Forcing Data Set for Global Soil Moisture Estimation,' *International Journal of Climatology*, 25, 1697-1714.
- Rodell, M., J.S. Famiglietti, J. Chen, S.I. Seneviratne, P. Viterbo, S. Holl, and C. R. Wilson (2004), Basin scale estimates of evapotranspiration using GRACE and other observations, *Geophys. Res. Lett.*, 31, L20504, doi:10.1029/2004GL020873.

## **SKILLS**

**Groundwater and soil analysis:** Vadose and saturated zone characterisation using aquifer pumping and recovery tests, pH and specific conductance meters, cation/anion analysis, electromagnetic surveying, soil gas chromatography, lysimeters, Guelph permeameters, gravimetric and theta probe soil moisture measurements, infrared temperature meters, and remote sensing data.

**Surface water analysis:** Runoff, infiltration, streamflow, precipitation, and wetland measurement/characterization using flow meters, weirs, precipitation gauges, flux towers, tensiometers, pore water samplers, biomass sampling, cation/anion analysis, and remote sensing data.

**Programming Languages:** Python, VBA, and FORTRAN 77 / 90.

**Software:** ArcGIS, Microsoft Access, ArcParticle, Aquachem, Netpath, Modflow, HEC-GeoHMS, HEC-HMS, ENVI, ERDAS, and Dreamweaver.

**Data analysis, reporting and presentation.**

## **REFERENCES**

Available upon request.