

TEXAS STATE VITA

Please note: For all entries, list most recent items first.

I. Academic/Professional Background

A. Name: Benjamin Schwartz

Title: Assistant Professor

B. Educational Background

<i>Degree</i>	<i>Year</i>	<i>University</i>	<i>Major</i>	<i>Thesis/Dissertation</i>
Ph.D.	2007	Virginia Tech	Geosciences	Hydrogeophysical quantification of infiltration and recharge through soil-filled sinkholes using Time Domain Reflectometry and Electrical Resistivity Tomography
B.S.	2003	Radford	Geology	

C. University Experience

<i>Position</i>	<i>University</i>	<i>Dates</i>
Assistant Professor	Texas State University – San Marcos, TX	2008-Present

D. Relevant Professional Experience

N/A

E. Other Professional Credentials (licensure, certification, etc.)

N/A

II. TEACHING**A. Teaching Honors and Awards:**

N/A

B. Courses Taught:

Spring 2009 – BIO 7360T: Karst Hydrogeology and Geomorphology, class materials

Spring 2009 – BIO 7102: Groundwater Surface Water Interactions

Fall 2008 – GEOL 4421: Hydrogeology, Texas State University

Spring 2007 – 1.5 months of Groundwater Hydrology, GEOL 4804, VT Dept. of Geosciences.

C. Graduate Theses/Dissertations or Exit Committees (if supervisor, please indicate):

2009 – Committee member for M.S. candidate Jonathan Gerst at Virginia Tech

D. Courses Prepared and Curriculum Development:

Spring 2009 – BIO 7360T: Karst Hydrogeology and Geomorphology, class materials

Spring 2009 – BIO 7102: Groundwater Surface Water Interactions

Fall 2008 - GEOL 4421: Hydrogeology, lectures and lab exercises, Texas State University

E. Funded External Teaching Grants and Contracts:

N/A

F. Submitted, but not Funded, External Teaching Grants and Contracts:

N/A

G. Funded Internal Teaching Grants and Contracts:

N/A

H. Submitted, but not Funded, Internal Teaching Grants and Contracts:

N/A

I. Other:

N/A

III. SCHOLARLY/CREATIVE

A. Works in Print

1. Books (if not refereed, please indicate)

a. Scholarly Monographs:

N/A

b. Textbooks:

N/A

c. Edited Books:

N/A

d. Chapters in Books:

Schwartz, B. F., Orndorff, W. D., Futrell, S. M., Lucas, P. C., 2009, Caves and Karst of Virginia. In: *Caves and Karst of North America*. A. N. Palmer and P. Palmer, editors. A book being published for the 2009 International Congress of Speleology held in Kerrville, Texas. In press

e. Creative Books:

N/A

2. Articles

a. Refereed Journal Articles:

Schwartz, B. F., W. D. Orndorff, M. J. Ficco, W. Balfour, N. W. Davis, and M. Futrell, 2009, Hydrogeology of the Mississippian Carbonate Karst System: Powell Mountain, Virginia. *Journal of Cave and Karst Studies*, in press

Schwartz, B. F., Schreiber, M. S., 2008, Quantifying potential recharge in mantled sinkholes using ERT. *Journal of Ground Water*, first published online in September 2008, doi: 10.1111/j.1745-6584.2008.00505.x.

Schwartz, B. F., Schreiber, M. S., Yan, T., 2008, Quantifying Field Scale Soil-moisture Using Electrical Resistivity Tomography. *Journal of Hydrology*, 362: 234-246

Schwartz, B.F., Schreiber, M.E., Pooler, P.S. and Rimstidt, J.D., 2008. Calibrating Access-tube Time Domain Reflectometry Soil Water Measurements in Deep Heterogeneous Soils. *Soil Science Society of America Journal*, 72(4): 917-930.

b. Non-refereed Articles:

Schwartz, B. F., 1999, Exploring Barberry Cave. *National Speleological Society News*, September, v. 57 no. 9. A report documenting the history of exploration in Barberry Cave, Bath County, Virginia.

Schwartz, B. F., 1999, Project Caving and Permanent Rigging. *National Speleological Society News*, October, v. 57 no. 10. A technical report dealing with solutions to problems encountered with rigging in long-term project caving.

Schwartz, B. F., 1993 - present, >20 Reports, maps and articles in *The Virginia Cellars*, the official publication of the Virginia Speleological Survey.

Schwartz, B. F., 1994 - present, >20 Reports, maps and articles in *The BCCS News*, the official publication of the Butler Cave Conservation Society.

3. Conference Proceedings

a. Refereed Conference Proceedings:

Doctor, D. H., **Schwartz, B. F.**, Gary, M. O., 2009, Preliminary Development of a Quantitative Karst Classification System, PHORMS. Proceedings of the 15th International Congress of Speleology, Kerrville, TX, July 19-26, 2009, in press.

Schwartz, B. F., Doctor, D. H., 2009, Geomorphic and Hydrogeologic Evolution of Karst in the Burnsville Cove, Virginia, U.S.A.: New Evidence and Perspectives. Proceedings of the 15th International Congress of Speleology, Kerrville, TX, July 19-26, 2009, in press.

Orndorff, W., Hypes, R., Lucas, P., Fagan, J., Zokaites, C., Orndorff, Z., Lucas, C., **Schwartz, B. F.**, 2005, Protecting Virginia's Caves and Karst through the Environmental Review Process. Proceedings of the *National Cave and Karst Management Symposium*, November 2005.

Schwartz, B. F. and Schreiber, M. E., 2005, New Applications of Differential Electrical Resistivity Tomography and Time Domain Reflectometry to modeling infiltration and soil moisture in agricultural sinkholes. Proceedings of the 10th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst. September 2005

Schwartz B. F., Schreiber M. E., and Orndorff W., 2004. Hydrologic characterization of sinkholes in agricultural settings: Implications for best management practices. Proceedings of the 2004 Virginia Water Resources Research Symposium, Blacksburg, Virginia, Oct 4-6, 2004.

b. Non-refereed:

N/A

4. Abstracts:

Doctor, D. H., **Schwartz, B. F.**, Gary, M. O., Preliminary Development of a Quantitative Karst Classification System, PHORMS. Accepted: 15th International Congress of Speleology, Kerrville, TX, July 19-26, 2009.

Schwartz, B. F., Doctor, D. H., Geomorphic and Hydrogeologic Evolution of Karst in the Burnsville Cove, Virginia, U.S.A.: New Evidence and Perspectives. Accepted: 15th International Congress of Speleology, Kerrville, TX, July 19-26, 2009.

- Schwartz, B. F.**, Doctor, D. H., Culver, D., Gerst, J., Hyde, S., Orndorff, W., Pipan, T., Reid, J. W., Schreiber, M. Characterizing epikarst hydrogeology using integrated hydrologic, geochemical and biological approaches. Geological Society of America Annual Meeting, October 4-8, 2008.
- Schwartz, B. F.**, Doctor, D. H., Swezey, C. S., Piatak, N. M., Geologic and Geomorphic Controls on Conduit Development in Burnsville Cove, Bath County, Virginia. Geological Society of America Annual Meeting, October 4-8, 2008.
- Gerst, J., **Schwartz, B. F.**, Hyde, S., Schreiber, M., The Role of Epikarst in Controlling Water Quality. Geological Society of America Annual Meeting, October 4-8, 2008.
- Schwartz, B. F.**, Hyde, S., Schreiber, M. E., Orndorff, Doctor, D. H., Culver, D., Pipan, T., Reid, J. W., High resolution hydrobiogeochemical response of cave drip-waters to surface conditions. Second Appalachian Karst Symposium, Eastern Tennessee State University, Johnson City, TN, May, 2008.
- Schwartz, B. F.**, Orndorff, W., Ficco, J., Balfour, B., Davis, N. W., Futrell, M., Hydrogeology of the Mississippian Carbonate Karst System, Powell Mountain, Virginia. Second Appalachian Karst Symposium, Eastern Tennessee State University, Johnson City, TN, May, 2008.
- Hyde, S., **Schwartz, B. F.**, Lucas, P., 2007, Characterizing discharge signals and flow mechanisms at a Virginia ebb and flow karst spring. Poster presentation at the *Geological Society of America annual meeting*, October, 2007
- Schwartz, B. F.**, Schreiber, M., 2007, Field scale soil moisture measurements using TDR-calibrated ERT data. Oral presentation at the *Geological Society of America annual meeting*, October, 2007
- Schwartz, B. F.**, Schreiber, M., 2006, Examining temporal changes in soil moisture in a karst sinkhole using differential ERT and TDR. Oral presentation at the *Virginia Water Science and Technology Symposium*, November, 2006
- Schwartz, B. F.**, Schreiber, M., 2006, Integrating Differential Electrical Resistivity Tomography and Time Domain Reflectometry as a tool for modeling soil moisture and infiltration in sinkholes. Oral presentation at the *Geological Society of America annual meeting*, October, 2006
- Schwartz, B. F.**, 2006, An update on Omega Cave System: the last 6 years of exploration and discovery in Wise County, Virginia. Oral presentation at the *National Speleological Society annual meeting*, August, 2006
- Schwartz, B. F.**, Schreiber, M., 2006, Integrating Differential Electrical Resistivity Tomography and Time Domain Reflectometry as a tool for modeling soil moisture and infiltration in sinkholes. Poster presented at the *SEG 2006 Hydrogeophysics Workshop*. August, 2006
- Schwartz, B. F.**, 2006, Techniques for measuring soil moisture in sinkholes. Oral presentation at the *Graduate Student Research Symposium*, Virginia Tech Dept. of Geosciences, March, 2006
- Schwartz, B. F.** and Schreiber, M. E., 2005, Using TDR and 2D Differential ERT to monitor changes in soil moisture in mantled agricultural sinkholes. Oral presentation at the *Geological Society of America Annual meeting*, October, 2005
- Schwartz, B. F.**, 2005, A multi-method approach to characterizing sinkhole hydrogeology and recharge mechanisms in agricultural settings. Oral presentation at the *Graduate Student Research Symposium*, Virginia Tech Dept. of Geosciences, March, 2005
- Schwartz, B. F.**, Schreiber, M. E., Orndorff, W. D., 2004, Hydrologic Characterization of Sinkholes in Agricultural Settings. Oral presentation at the *Geological Society of America annual meeting*, November 2004.

Schwartz, B. F., Schreiber, M. E., Orndorff, W. D., 2004, Hydrologic Characterization of Sinkholes Using a Multi-method Approach. Oral presentation at the *Virginia Water Resources Research Center symposium*, October 2004.

Schwartz, B. F., Schreiber, M. E., Orndorff, W. D., 2004, Hydrologic Characterization of Sinkholes Using a Multi-method Approach. Poster presented at *Geological Society of America NE-SE meeting*, March 2004.

Orndorff, W. D., **Schwartz, B. F.**, Orndorff, Z. W., 2004, Patterns of Karst Hydrological Systems Developed in Ordovician-aged Carbonates of the Southwestern Virginia Valley and Ridge. Oral presentation at the *Geological Society of America NE-SE meeting*, March 2004.

Schwartz, B. F., 2004, Hydrologic characterization of sinkholes using a multi-method approach. Oral presentation at the *Graduate Student Research Symposium*, Virginia Tech Dept. of Geosciences, March, 2004

5. Reports:

N/A

6. Book Reviews:

N/A

7. Other:

Schwartz, B. F., 2009, Caves and Karst of Virginia: Field Camp #37: Guidebook for a week-long field trip held prior to the 15th International Congress of Speleology in Kerrville, TX, July, 2009.

Schwartz, B. F., 2008, Karst of the Mississippian Carbonate System – Powell Mountain. *In: Field trip guidebook for the Second Appalachian Karst Symposium: The Karst of Northeastern Tennessee and Southwestern Virginia*. Yongli Gao, Wil Orndorff and Robert Benfield (Editors), Eastern Tennessee State University, Johnson City, TN, May 7-10, 2008

B. Works not in Print

1. Papers Presented at Professional Meetings:

Same as abstract list above.

2. Invited Talks, Lectures, and Presentations:

Schwartz, B. F., February 26, 2009, Interdisciplinary Approaches to Speleology and Karst Studies. Weekly seminar speaker at UT Arlington Department of Earth and Environmental Sciences, Arlington, TX

Schwartz, B. F., November 12, 2008, Omega Cave System: 13 years of exploration and discovery. Weekly seminar speaker for the Texas State University Geology Club, San Marcos, TX.

Schwartz, B. F., March, 2007, Hydrogeophysics and Hydrogeology in Virginia's Karst. Weekly seminar speaker at USGS-Reston, Reston, VA

Schwartz, B. F., November, 2006, Karst, hydrology and geophysics - (How to turn a sinkhole into a complex hydrogeophysical problem). Weekly seminar speaker at Eastern Tennessee State University, Department of Physics, Astronomy and Geology, Johnson City, TN.

Schwartz, B. F., 2006, Karst, hydrology and geophysics - (How to turn a sinkhole into a complex hydrogeophysical problem). Weekly seminar speaker at Appalachian State University, Department of Geology, Boone, N.C.

3. Consultancies:

N/A

4. Workshops:

2005 Wrote a field guide for, organized, and led a two-day karst hydrology field trip to Bath County, VA for a graduate level Karst Hydrology class at Virginia Tech. The field trip was a critical link between classroom exercises, instruction, and discussion and the 'real-world' aspects of karst geology and hydrogeology. The trip included a trip into one of the largest caves in Virginia to observe a karst hydrologic system from the inside.

2005 Assisted with a four-day Project Underground workshop and field trip for VA earth science teachers where the primary emphasis was on how to incorporate karst science into SOL materials. Presented an invited talk about my research on sinkhole hydrology and hydrogeophysics and discussed how this current research could be incorporated into classroom materials.

5. Other:

N/A

C. Grants and Contracts

1. Funded External Grants and Contracts:

2008 \$46,278, (\$8,178 to Schwartz as Co-PI) USDA SAWC – Rio Grande Project. PI: Kevin Urbanczyk, Sul Ross State University. Co-PI's: Benjamin Schwartz – Texas State University, Jeffery Bennett – Big Bend National Park. *Evaluation of source of spring flow from Cretaceous Aquifers along the Rio Grande Wild and Scenic River.*

2008 \$293,689, Texas Commission on Environmental Quality, Section 319(h) NPS Water Pollution Management Program. PI: River Systems Institute, Co PI: Dr. Weston Nowlin, Co PI: Dr. Benjamin Schwartz, Texas State University. *Determination of NPS Nutrient Inputs to Spring Lake and San Marcos River Headwaters.* Anticipated start date: January 2009

2008 \$150,000, Texas ARP/ATP. Co-PI: Susan Schwinning, TSU Dept of Biology. *Epikarst Controls on Recharge, Water Quality and Ecosystem dynamics in Central Texas Hill Country.*

2007 \$13,386 Cave Conservancy Foundation. *The Role of Epikarst in Controlling Recharge, Water Quality and Biodiversity in Karst Aquifer Systems of Virginia*

2007 \$20,000 Virginia Water Resources Research Center grant. *The Role of Epikarst in Controlling Recharge, Water Quality and Biodiversity in Karst Aquifer Systems of Virginia*

2005 \$2,000 Geological Society of America research grant.

2005 \$300 Research grant from West Virginia Association for Cave Studies.

2003 \$4,600 Research grant from Cave Conservancy of the Virginias for equipment.
Can Cave Sediments Predict Past Flood Magnitudes?

2. Submitted, but not Funded, External Grants and Contracts:

N/A

3. Funded Internal Grants and Contracts:

2008 \$4,500, Texas State University Research Enhancement Program (REP) Co-PI: Dr. Garland Upchurch – Texas State University. *New records of karstic landscape evolution, fossil plant assemblages, and paleo-hydrology as preserved in an ancient Appalachian sinkhole-lakebed.*

4. Submitted, but not Funded, Internal Grants and Contracts:

2009 \$100,494, (**in review**) Water Resources Research National Competitive Grants Program. Co-PI: Dr. Madeline Schreiber – Virginia Tech, Collaborator: Dr. Daniel H. Doctor - USGS *The Role of Epikarst in Controlling Recharge, Water Quality and Biodiversity in Karst Aquifers: A Comparative Study between Virginia and Texas*

2009 \$10,038, (**in review**) Cave Conservancy of the Virginias. Co-PI: Dr. Garland Upchurch – Texas State University. *New Records of Karstic Landscape Evolution, Fossil Plant Assemblages, and Paleo-Hydrology as Preserved in an Ancient Appalachian Sinkhole-Lakebed*

D. Fellowships, Awards, Honors:

2007 Virginia Tech College of Science Runner-up Award for Outstanding Graduate Student of the Year.

2006 \$15,000 Cave Conservancy Foundation's Ph.D. Graduate Fellowship in Karst Studies. *A multi-method approach to characterizing sinkhole hydrogeology and recharge mechanisms in agricultural settings.*

Fall 2006 Full Research Assistantship and other funding - co-wrote grant proposal with Dr. Madeline Schreiber to Virginia Water Resources Research Center.

Spring 2006 Byron N. Cooper Graduate Fellowship award. Full Research Assistantship funding for one semester. Dept. of Geosciences, Virginia Tech.

2005 \$5,000 Cave Research Foundation's annual Karst Research Fellowship. Presented annually to one student who proposes an outstanding karst-related research project.

2005 \$2,000 National Speleological Society's Ralph W. Stone Award and Fellowship.

2005 Award: GSA outstanding research proposal. One of 19 from 720 applications.

2005 \$250 and award: GSA Hydrogeology Division outstanding research proposal. One of three.

2000 \$5,000 Cave Conservancy Foundation's Undergraduate Fellowship in Karst Studies.

1999 Fellow award - National Speleological Society.

IV. SERVICE

A. University:

N/A

B. Departmental:

Set up and maintain the Arc-GIS server in Freeman Aquatic Station. Also assist students and faculty with installation, setup and troubleshooting of Arc-GIS Desktop.

C. Community:

N/A

D. Professional:

Reviewer: Journal of Hydrology

Reviewer: Lakes and Reservoirs Research and Management

Reviewer: Journal of Ground Water

Reviewer: Journal of Cave and Karst Studies

E. Organizations

2003 – present: Property/project co-manager of the Powell Mountain Karst Preserve, for the Cave Conservancy of the Virginias.

1997 – 2003 and 2006 – 2007: Director - Board of directors, Butler Cave Conservation Society.

1993 – present: Director - Board of directors, Virginia Speleological Survey.

1. Honorary:

N/A

2. Professional:

F. Services Honors and Awards:

N/A