

Scott Campbell Worland

“The mind that is not baffled is not employed. The impeded stream is the one that sings.”

-Wendell Berry

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EDUCATION:

M.S. Candidate Vanderbilt University, Department of Earth and Environmental Sciences, Vanderbilt’s Institute for Energy and the Environment (expected graduate, 5/2014)

B.S. Environmental Sciences with emphasis in geology/geography and freshwater ecology, Georgia College and State University, Milledgeville, GA (2012, Overall GPA- 4.0)

H.S. McCallie High School, Chattanooga, TN (2007)

ACADEMIC AND PROFESSIONAL INTEREST:

Hydrology: groundwater occurrence, transport and fate; surface water processes

Water chemistry: Biogeochemical processes

Ecology: Mainly freshwater diatoms, but also marine algal taxa and terrestrial biota

Geophysics: Subsurface mapping using electromagnetic induction

Geomorphology: fluvial processes

ACADEMIC EXPERIENCE:

Teaching Assistant: Vanderbilt University: Science, Risk and Policy (Spring 2013), Dynamic Earth (Spring 2013), Earth Systems through Time (Fall 2012)

Graduate Thesis Research: (2012-present) Vanderbilt University, ONR funded, Characterizing the Hydrogeology of a Polder in Southwest Bangladesh: Exploring origin, transport and the fate of saline groundwater beneath a reclaimed mangrove forest currently being used for rice production. Using subsurface mapping techniques such as electromagnetic induction, borehole gamma loggers and lithologs. Modeling groundwater flow using numerical methods in MATLAB, and establishing water ages using radiometric isotopes. (Advisor: George Hornberger, VIEE)

Harpeth River research: (2013) Characterizing the Hydrostratigraphic Controls on Groundwater Discharge into the Harpeth River Using Thermal Signatures and Electromagnetic Induction: Exploring the control on groundwater flows using thermal anomalies and electromagnetic induction. Modelling the flow paths using the layered earth model generated from inversions of electromagnetic induction as boundary parameters.

Undergraduate research: (2011-2012) GCSU, Exploring the interface between freshwater hydrology and the algal taxa found on Sapelo Island, GA: Involving an investigation of surface water and groundwater interactions using temporary piezometer installation and chloride signatures, spatial analysis using inverse distance weighted interpolations in ArcGis and standard processing and enumeration of phytoplankton and periphyton algal communities from different aquatic habitats (Mentors: Dr K. Manoylov, Dr. S. Mutiti)

PRESENTATION(S):

Worland, S.C, Hornberger, G (2013). *Characterizing the Hydrostratigraphic Controls on Groundwater Discharge into the Harpeth River Using Thermal Signatures and Electromagnetic Induction*. 2013 Tennessee Water Resources Symposium. Montgomery Bell State Park, TN. (presentation forthcoming)

Worland, S.C, Manoylov, K, Mutiti, S. (2012). *Sapelo Island Freshwater Algae: A Taxonomic Survey and Evaluation of pristine habitats*. Georgia College and State University (GCSU)/Council of Public Liberal Arts Colleges (COPLAC) Conference on Undergraduate Research (CUR), Milledgeville, GA

HONORS/ ORGANIZATIONS:

Teaching assistantship, Vanderbilt University; Earth and Environmental Science Fellow, Vanderbilt's Institute for Energy and the Environment
GCSU Alumni Scholarship, four semesters (2010-2012)
GCSU Foundation Scholarship, two semesters (2011-2012)
Coca-Cola scholarship, two semesters (2011-2012)
Tri-Beta Member
Alpha Lambda Delta member
Phi Kappa Phi member
Presidents list (4.0 GPA) 8 semesters
Presented undergraduate research at GCSU research conference
Abstract selected for TNAWRA symposium (2013)
Selected to present at COPLAC conference (2012)
Selected to be published in *Metamorphosis* (2012)
Eagle Scout (2005)
Geological Society of America member
American Geophysical Union member

WORK EXPERIENCE:

Volunteer at USGS: Nashville, TN (2013-present)
Teaching assistant: Vanderbilt University (2012-present)
Managed small farm: Milledgeville, GA (2011-2012)
Contractor- fence/hay shed building: Chickamauga, GA (2011-present)
Farm hand: Naomi, GA (2010-2012)
Land upkeep crew: Cloudland Station land development, Chickamauga, GA (2008-2011)
Farm upkeep: High Point, GA (2006-2008)
Life Guard: Chickamauga, GA (2004-2006)
Farm hand: Hinkle, GA (2003)

COMMUNITY SERVICE:

Volunteer at Preston Taylor Ministries (Nashville TN, Mondays, 2013-present)
Volunteer at soup kitchen (Nashville TN, Tuesdays, 2012-January 2013)
Volunteer at soup kitchen (Milledgeville GA, Tuesdays, 2011)
Camp Counselor (Hidden Hollow Day Camp, Chickamauga GA, 2002-2012)
Volunteer at the Salvation Army during Thanksgiving/ Christmas (2000-2011)
Service work in Uganda, Kenya and the Philippines (2007-2008)
Big brother in *Big Brothers Big Sisters* program (2005-2007)

OTHER SKILLS: Microsoft Word, Excel, PowerPoint. LATEX word processor, MATLAB, ArcMap GIS, MODFLOW, TOPODRIVE, GEM-2, UBC inversion software, Surveying equipment, small and large machinery, work well independent, solid verbal and writing skills, can carry simple conversations in Spanish (acquired over years of farm work and a few classes!)

PERSONAL: Married to Bonnie Worland and have a daughter, NoraJean Worland (Nov.4 2012) and are active in our local church. I enjoy studying scientific thought, epistemology and philosophical evolution, playing sports, fishing, hunting, exercise, healthy eating, supporting local economics, solitude, small scale farming and advocating for rural communities.

REFERENCES:

Dr. George Hornberger (George.m.hornberger@vanderbilt.edu)

Director of Vanderbilt Institute for Energy and Environment
Professor of Civil and Environmental Engineering
Professor of Earth and Environmental Sciences
Vanderbilt University
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Dr. Kalina Manoylov (Kalina.manoylov@gcsu.edu)

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Department of Biological and Environmental Sciences
Georgia College and State University
Office number: (478) 445-2439

Dr. Samuel Mutiti (samuel.mutiti@gcsu.edu)

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Department of Biological and Environmental Sciences
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