

# Tiffany G. Wilson

Doctoral Student  
Durham, NC, USA

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## EDUCATION

### Duke University

*Ph.D. in Civil and Environmental Engineering*

December 2014 (Expected)

*Durham, NC*

Advisor: Dr. John D. Albertson

Dissertation topic: Effects of changing seasonality of temperature and precipitation on vegetation and water dynamics in semi-arid climates

**Certificate in Wireless Sensor Networks**, requiring courses in Environmental Sensing, Artificial Intelligence, and Intelligent Sensors, along with participation in the annual WISeNet workshop.

**Certificate in College Teaching Program**, requiring practical teaching experience and peer evaluation, two courses relating to topics in college teaching, and development of an online teaching portfolio.

Research interests: Semiarid hydrology and ecohydrology, evolution of soil moisture, effects of changing seasonality of precipitation and temperature on vegetation and the water cycle.

Relevant Courses: Land Atmosphere Interactions, Ecohydrology, Hydrology Modeling for Water Quality and Quantity Assessment, Groundwater Hydrology, Intermediate and Advanced Fluid Mechanics, Pollutant Transport Systems, The Climate System, Scientific Computing, Numerical Analysis

### Princeton University

*B.S.E. in Civil and Environmental Engineering, Magna Cum Laude*

June 2007

*Princeton, NJ*

Certificate in Geological Engineering

Undergraduate Thesis: Effects of Climate Change on the New York City Water Supply

Relevant courses: Hydrology, Environmental Engineering Laboratory, Rivers and the Regional Environment, Earth Surface Processes, Water Quality, Environmental and Civil Engineering Systems Planning and Design, Structural Geology

## TEACHING EXPERIENCE

### Hydrology and Water Resources

*Graduate Teaching Assistant*

Fall 2012

*Duke University*

Description: Undergraduate course (16 students) in the Pratt School of Engineering on topics including the water cycle, flood routing, groundwater, frequency analysis, ground water, water supply, and hydrologic design.

Prepared homework assignments and laboratory materials.

Graded homework assignments and lab reports.

Held weekly recitation sessions to present additional relevant material to students and answer course-work questions.

Held weekly office hours to improve student comprehension on labs and homework.

Gave guest lectures on storm frequency analysis, flood routing, and groundwater well hydraulics.

## **Fluid Mechanics**

*Graduate Teaching Assistant*

Fall 2011

*Duke University*

Description: Undergraduate course (30 students) in the Pratt School of Engineering on fluid statics and dynamics.

Graded homework assignments and lab reports.

Led bi-weekly hands-on lab sessions including review of equipment and relevant concepts. Lab topics included surface tension, viscosity, Bernoulli's theorem, hydraulic jumps, and laminar/turbulent flow.

Held weekly office hours to answer student questions on labs and homework.

## **SAT Solutions**

*Teacher and Tutor*

August 2005 – October 2006

*Medford, NJ*

Taught two weekly 90-minute classes preparing high school students for the mathematics sections of the SAT exam.

Created lesson plans, homework solution guides, and review of course materials.

Held individual math tutoring sessions.

## **INDUSTRY EXPERIENCE**

### **Malcolm Pirnie, Inc.**

*Engineer*

July 2007 – July 2009

*Plantation, FL*

Contributed to projects and reports for the Municipal Water Environment business unit of an Environmental Engineering consulting firm.

Project experience: water treatment plant chemical system design, development of water conservation plans, water supply planning, emergency groundwater remediation, gravity sanitary sewer design, and regulatory compliance.

Regularly analyzed data using Excel, Access and ArcMap to produce graphs, charts, and maps for consulting reports.

## **AWARDS**

Wireless Intelligent Sensor Networks (WISeNet) Integrative Graduate Education and Research Training Fellowship (\$30,000/year) 2012 – 2014

James B. Duke Fellowship (\$20,000) 2009 – 2013

Pratt-Gardner Fellowship (\$9,000) 2009 – 2010

Peter W. Stroh '51 Environmental Senior Thesis Prize (\$500)	2007
W. Taylor Thom Jr. Prize in Geological Engineering (\$100)	2007
Malcolm Pirnie/UNCF Corporate Scholar (Paid Summer Internship)	2006

## WORKSHOPS, CONFERENCES, AND POSTER PRESENTATIONS

**Workshop on Wireless Intelligent Sensor Networks (WISeNet)** June 4–5, 2013  
*Duke University* *Durham, NC*

Poster and Presentation: **T.G. Wilson**. Towards optimal placement and operation of soil moisture sensors based on land surface features and topography.

**GradX Talks** April 2, 2013  
*Duke University* *Durham, NC*

Presentation: **T.G. Wilson**. Climate Change, Vegetation, and Water Supply.

**Ecohydrology and Sustainability in Seasonally Dry Ecosystems** June 13–14, 2011  
*NSF-CBET and Pratt School of Engineering, Duke University* *Durham, NC*

Poster: **T.G. Wilson**, C. Cortis, R. Corona, N. Montaldo, J.D. Albertson. Design and testing of a low-cost plot-scale rainfall simulator in Sardinia, Italy, for calibration of a distributed hydrologic model

**AGU Fall Meeting 2010** December 13–17, 2010  
*American Geophysical Union* *San Francisco, CA*

Poster: **T.G. Wilson**, C. Cortis, R. Corona, N. Montaldo, J.D. Albertson. Design and testing of a low-cost plot-scale rainfall simulator in Sardinia, Italy, for calibration of a distributed hydrologic model

Presentation: J. D. Albertson, **T.G. Wilson**, N. Montaldo. Interannual rainfall variability, vegetation dynamics, and runoff controls in Mediterranean climates.

## PUBLICATIONS

**T.G. Wilson**, C. Cortis, R. Corona, N. Montaldo, J.D. Albertson, 2013 (*under review*). Development and testing of a large transportable rainfall simulator for plot-scale runoff.

## SERVICE

**Graduate and Professional Student Council** April 2013–Present  
*Executive Board* *Duke University*

Act as advocate for graduate and professional students at Duke through planning with the rest of the Executive Board, meetings with University administration, etc.; organize events for over 7,000 graduate and professional students; manage a budget of over \$30,000.

**GPSC Basketball Committee***Subcommittee chair, graduate student usher*

September 2012–Present

*Duke University*

Plan the food and entertainment for the annual Basketball Ticket Campout, a weekend-long event for approximately 2,000 graduate and professional students. During the basketball season, volunteer as an usher to help students enter Cameron Indoor Stadium for men's basketball games.

**CEE Graduate Student Council***Board Member*

March 2011–May 2012

*Duke University*

Plan academic, professional, and social events for graduate students in Duke University's Department of Civil and Environmental Engineering.

**Florida Section AWWA***Board Member*

June 2008 – July 2009

*Broward County, FL*

As a Region 6 Board Member and Young Professionals Chair, planned events for the water industry professionals of South Florida, including a half-day seminar and bowling tournament.

**Christmas in July***Board Member*

2006 – 2009

*Ft. Lauderdale, FL*

Helped plan Christmas in July, an annual event for nearly 1,000 children from homeless shelters in Broward County, Florida.

**SKILLS****Programming and Markup Languages**C/C++, L<sup>A</sup>T<sub>E</sub>X**Software**

MATLAB, Mathematica, MS Office

**Technology Platforms**

Google sites, Blackboard, Sakai

**Languages**

English (native), Spanish (intermediate)

**PROFESSIONAL ORGANIZATIONS AND LICENSES**

American Geophysical Union

2010 – Present

Sigma Xi, Scientific Research Society

2007 – Present

Engineer in Training (F.E. Exam), State of Florida

October 2008

Florida Section AWWA, Broward County, Florida

2007 – 2009