

# William Robert Locke, E.I.T.

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## Education

<b>Clemson University</b> , Clemson, SC <i>Ph.D. in Civil Engineering, concentration in Structural Engineering</i>	August 2016 - Present 4.0 GPA overall
<b>Clemson University</b> , Clemson, SC <i>M.S. in Civil Engineering, concentration in Structural Engineering</i>	August 2015 - Present 3.9 GPA overall
<b>Clemson University</b> , Clemson, SC <i>B.S. in Civil Engineering, concentration in Structural Engineering</i>	May 2015 3.98 GPA in major 3.82 GPA overall

## Research Experience

<b>Clemson University</b>	Clemson, SC
<b>Project:</b> Structural Health Monitoring of Highway Bridges using Accelerometers in Pedestrian Vehicles	
<ul style="list-style-type: none"><li>• The project is currently in the proposal stage. Thus far research has been centered around integrating real world variables into numerical models to accurately portray the response of single span and multi-span bridges due to vehicle travel.</li><li>• The numerical models are to be trained to detect which variables have an effect on the natural frequency, strain, stress, and deflection of bridges.</li><li>• The end goal is to create a program that can account for changes, due to natural variables, to find a baseline modal response in order determine if a structure is damaged or not.</li></ul>	
<b>Project:</b> Smart and Connected Communities Proposal for an Off Grid Community	
<ul style="list-style-type: none"><li>• The project is currently in the proposal stage. Thus far research has been centered around collecting information on building resilient power grid systems and determining risk factors for those systems.</li></ul>	

## Work Experience

<b>Clemson University</b>	Clemson, SC
<i>FIRST Program Graduate Assistant</i>	August 2015-August 2016
<ul style="list-style-type: none"><li>• Acted as advisor for the FIRST social organization, was in charge of: training the officers, leading weekly meetings, coordinating events/ activities, and ensuring the overall success of the organization.</li><li>• Charged with creating agendas, and at times, leading weekly mentor meetings.</li><li>• Conducted individual meetings with mentors to evaluate their performance and check on their mentees. Advise was given on how to get students more involved in the program, how to improve their study skills, and how to manage their weekly school and personal schedules.</li><li>• Scheduled and conducted interviews to hire mentors and summer counselors. Several of the mentors hired are still working with the program and have produced mentors and counselors of their own.</li><li>• Managed office workers, helped with training, assigning projects, and monitoring work.</li><li>• Lead mentor/ mentee retreats, helped teach: team building, leadership skills, communication skills, and tools for success in college.</li><li>• Served as 1 of 3 instructors for the mentor training class; helped teach lessons and grade course work.</li><li>• Helped prepare for summer programs by managing applications, calculating the budget, and communicating with various offices around campus.</li><li>• Met with the Under Secretary of Education, Ted Mitchell, to raise awareness about FIRST generation students in post-secondary institutions.</li></ul>	

## **Infrastructure Engineering**

Greer, SC

*Co-op Student*

August 2014-December 2015

- Aided in visual forensic investigations of bridge structures spanning over bodies of water. Main job was to identify defects and mark their locations on the structure. Developed an understanding of which defects were signs of major problems and what their potential causes were.
- Helped write findings reports for clients. Was in charge of summarizing defects found and indicating if they posed a threat to the integrity of the structure. Was also trusted to indicate overall condition of structure and suggest if immediate repairs be made or not.
- Was in charge of editing and creating Auto-CAD drawings to show damage and suggest repairs.
- Acted as lead co-op during second and third rotations. Was charged with training new interns and acted as leader on preparing pre inspection documents, findings reports, and drawings.
- Performed minimal structural calculations for damaged members to determine load bearing capacity.
- Traveled across the country to help relocate vehicle assets and prepare them for future jobs.

## **Clemson University**

Clemson, SC

*FIRST Program UPIC Intern/ Mentor*

July 2012-August 2015

- Responsible for mentoring and tutoring first-generation engineering students.
- In charge of planning and executing study sessions.
- Required to organize group activities to keep students involved in campus life.
- Accountable for the success of first generation students their freshman and sophomore years.
- Performed presentations in front of university officials to receive financial support for the program.
- Acted as fundraising chairman; raised approximately \$2500 in funds for the student organization.
- Featured in an article and video about FIRST generation success and the problems FIRST students face.

## **NCDOT**

Shelby, NC

*Summer Intern*

May 2014 – August 2014

- Helped oversee crews during the construction of two overpass bridges for the US-74 Shelby Bypass.
- Performed soil density tests using a Nuclear Density Gauge.
- Aided in ASTM standard testing during concrete deck pours.
- Charged with managing trucks entering the job site and their dump locations.
- Used GPS/ GNSS tools to perform elevation measurements for grades and subgrades.

## **Construction Science and Engineering, Inc.**

Westminster, SC

*Co-op Student*

Spring 2013 and Fall 2013

- Charged with managing and maintaining the photo database.
- Participated with and performed forensic investigations for various types of structures.
- Wrote letters and reports for clients discussing problems and repairs for subject properties.
- Created Auto-CAD and Google Sketchup drawings for suggested repairs.
- Performed structural, hydrological, and geotechnical analyses on a regular basis.

## **Awards, Honors, and Achievements**

- Doctoral Fellowship, DAISE GAANN Fellow for the study of Structural Health Monitoring of Bridges, Clemson University, Fall 2016-Present
- Graduated Cum Laude, Clemson University, May 2015
- Presidents Honor List, Clemson University, Spring 2014
- Deans Honor List, Clemson University, Fall 2011, Fall 2012, and Spring 2012
- RCI Student Scholar and Scholarship Recipient, Spring 2013
- Won first place for age group in Annual March of Dimes 5k, Fall 2016

- Completed over 200 hours of Community Service, Fall 2010-Present

### **Computer/ Engineering Skills**

AutoCAD	Ansys	SAP2000	MathCAD	Matlab
Rstudio	Google Sketchup	Microsoft Office	OSHA Certified	Confined Spaced Certified

### **Memberships**

- Student member, American Society of Civil Engineering, ASCE, since 2012
- Student member, American Concrete Institute, ACI, since 2014
- Member, Tau Beta Pi, since 2014
- Member, Chi-Epsilon, since 2013

### **References**

- Sherry Dorris, FIRST Program Director, Clemson University, 8646561674, [sdorris@clemson.edu](mailto:sdorris@clemson.edu)
- Aaron McHan, Office Manager, Infrastructure Engineering, Inc., 8645958030, [amchan@go-ie.com](mailto:amchan@go-ie.com)
- Dr. Sez Atamturktur, Associate Professor, Clemson University, 8646563003, [sez@clemson.edu](mailto:sez@clemson.edu)