

# Joshua Alexander Benjamin, E.I.

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## EDUCATION

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**Ph.D. in Environmental Engineering (Expected)** May 2021  
University of South Florida, Tampa, FL

**B.S. in Environmental Engineering** May 2017  
University of Florida, Gainesville, FL, Magna Cum Laude  
Minor in Materials Science and Engineering

## RESEARCH AND WORK EXPERIENCE

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**Graduate Research Assistant** August 2017 – Present  
MASS Lab, Dr. Qiong Zhang; Watershed Sustainability Lab, Dr. Mauricio Arias, University of South Florida, Tampa, FL

- Analyzing pressure retarded osmosis power generation pretreatment schemes for foulant reduction
- Generating process designs for sustainable power generation technology in the water sector
- Independently leading research project across multiple research groups
- Gaining experience in numerical modeling and academic writing
- USF Presidential Fellow, Alfred P. Sloan Fellow, GEM Full Fellow

**GEM Graduate Intern** June 2017 – August 2017  
Water Power Group, Dr. Brennan Smith, Oak Ridge National Laboratory, Oak Ridge, TN

- Quantified environmental metrics for small modular hydropower development
- Created and analyzed ecologic, hydrologic, economic, and geomorphic datasets
- Developed computational models in Python using Anaconda

**University/McNair Scholar** February 2015 – May 2017  
Watershed Ecology Lab, Dr. David Kaplan, University of Florida, Gainesville, FL

- Designed an optical-based water level sensor for the measurement of evapotranspiration
- Garnered novel insights in the areas of sensor design and eco-hydrology
- Analyzed various sensor technologies and learned valuable software development skills
- Conducted field work and environmental site assessments in springs, wetlands, and uplands

**Benjamin A. Gilman International Scholar** August 2014 – April 2015  
U.S. Department of State Bureau of Educational & Cultural Affairs

- Applied skills learned abroad by organizing a bioblitz at the La Chua Trail inside of Paynes Prairie State Park
- Exposed members of local community to the importance of biodiversity and conservation
- Surveyed 187 individual specimens across 29 species
- Constructed a dataset that was sent to Florida Department of Environmental Protection and iNaturalist

**Customer Service Representative** May 2014 – June 2014  
Express Employment, Bill Brown, Ocala, FL

- Worked various physically demanding jobs in a fast-paced client-oriented environment
- Communicated with a variety of clients in a concise and professional manner

**Undergraduate Research Assistant** January 2014 – May 2014  
UF Waste Management Group, Dr. Timothy Townsend, University of Florida, Gainesville, FL

- Investigated the viability of electronic materials reclamation in waste to energy ash residuals
- Learned leachate analysis procedures, such as TCLP (Toxicity Characteristic Leaching Procedure)

## INTERNATIONAL EXPERIENCE

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### Studied Abroad in New Zealand

July 2014 – August 2014

UF in New Zealand - Biodiversity and Conservation, Dr. Hostetler, University of Lincoln, Lincoln NZ

- Inspected various land management techniques, as well as green infrastructure and sustainable systems
- Examined the importance of biodiversity and conservation
- Demonstrated self-reliance by traveling to unfamiliar environments

## PUBLICATIONS

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**Benjamin, J.,** Kaplan, D. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. *Proceedings of the 2017 IEEE Conference on Technologies for Sustainability*, Phoenix, Arizona, November 2017.

**Benjamin, J.,** Kaplan, D. Development of a Fine-Scale Laser-Based Water Level Sensor. *Journal of Undergraduate Research*.

## PRESENTATIONS

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**Benjamin, J.,** Kaplan D. 2017. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. Annual Meeting of the American Water Resources Association, November 2017, Portland, OR.

**Benjamin, J.,** Kaplan D. 2017. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. IEEE Conference on Technologies for Sustainability (SusTech), November 2017, Phoenix, AZ.

**Benjamin, J.,** Kaplan D. 2017. Laser-based Water Level Sensing: Seeing the Unseen. Invited talk at the Annual Meeting of the American Water Resources Association, November 2017, Portland, OR.

**Benjamin J.,** Smith B., Witt A. Pracheil B. Using Environmental Metrics to Assess the Potential Impacts of Standard Modular Hydropower Development. Poster at the Oak Ridge National Laboratory Graduate/Postgraduate/Faculty Poster Session, August 2017, Oak Ridge, TN.

**Benjamin J.,** Smith B., Witt A. Pracheil B. Using Environmental Metrics to Assess the Potential Impacts of Standard Modular Hydropower Development. Oak Ridge National Laboratory GEM Technical Session, August 2017, Oak Ridge, TN.

**Benjamin, J.,** Kaplan D. 2017. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. Poster at the 2017 Florida Undergraduate Research Conference, February 2017, Boca Raton, FL.

**Benjamin, J.,** Kaplan D. 2016. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. Poster at the 2016 AWRA Annual Meeting, November 2016, Gainesville, FL.

**Benjamin, J.,** Kaplan D. 2016. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. Poster at the AEESP Distinguished Lectureship Workshop, September 2016, Gainesville, FL.

**Benjamin, J.,** Kaplan D. 2016. Development of a Laser-Based Water Level Sensor for Fine-Scale Ecohydrological Measurements. UF Ronald E. McNair Scholars Summer Research Symposium, August 2016, Gainesville, FL.

**Benjamin, J.,** Kaplan D. 2016. Development of a Fine-Scale Laser-Based Water Level Sensor. Poster at the 2016 SAEOPP McNair/SSS Scholars Research Conference, June 2016, Atlanta, Ga.

**Benjamin, J.,** Kaplan D. 2016. Development of a Fine-Scale Laser-Based Water Level Sensor. Poster at the 17th UF

Undergraduate Research Symposium, March 2016, Gainesville, FL.

**Benjamin, J.**, Kaplan D. 2016. Development of a Fine-Scale Laser-Based Water Level Sensor. Poster at the 2016 Florida Undergraduate Research Conference, February 2016, Tampa, FL.

**Benjamin, J.**, Kaplan D. 2016. Development of a Fine-Scale Laser-Based Water Level Sensor. Poster at the 2016 ESSIE Poster Symposium, February 2016, Gainesville, FL.

**Benjamin, J.**, Kaplan D. 2016. Development of a Fine-Scale Laser-Based Water Level Sensor. Poster at the 5th UF Water Institute Symposium: Trends, Cycles, and Extreme Events, February 2016, Gainesville, FL.

## SKILLS

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**Research Skills:** Data Analysis, Sensor Design, Numerical Modeling, Spectrophotometry, Soldering

**Language:** English (Fluent), Spanish- [Speaking/Reading (Intermediate), Writing (Basic)]

**Software:** AutoCAD, ArcGIS, Python (Anaconda), MATLAB, Visual Basic, AutoDesk 123D Design, Visual MINTEQ  
Adobe Photoshop (Basic), Bluetooth Studio (Basic), Android Studio (Basic), Java (Basic), R (Basic)

**Trumpet Player:** Gator Band, UF Concert Band

## COMMUNITY SERVICE

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**ACES Conference Volunteer** December 2016

A Community for Ecosystem Services (ACES) 2016 Conference, Jacksonville, FL

- Ensured that the conference ran smoothly and on time
- Registered and directed conference attendees to various sessions

**CURBS Peer Advisor** August 2016 – May 2017

Center for Undergraduate Research, University of Florida, Gainesville, FL

- Guided students in finding undergraduate research opportunities at the University of Florida
- Assisted students in finding avenues to disseminate their research

**MentorUF High School Mentor** August 2016 – April 2017

Brown Center for Leadership and Service, University of Florida, Gainesville, FL

- Mentored disadvantaged students at Buchholz High School in Gainesville, FL
- Educated students in mathematics, science, government, English, and history

**UF Environmental Engineering Mentoring Program Mentor/Webmaster** August 2016 – April 2017

Center for Undergraduate Research, University of Florida, Gainesville, FL

- Served on the E-board as Webmaster and helped coordinate mentoring activities
- Mentored two female environmental engineering students

**Director of Labs** January 2015 – May 2015

TEDxUF, University of Florida, Gainesville, FL

- Organized an event that had over 1600 registered attendees
- Coordinated a diverse group of 12 innovative organizations

## PROFESSIONAL ORGANIZATIONS

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American Water Works Association February 2017 - Present

Florida Water Environment Association March 2017 - Present

Tau Beta Pi Engineering Honor Society November 2016 – Present

American Water Resources Association August 2016 – Present

Society of Wetland Scientists April 2016 – January 2017

## **AWARDS AND SCHOLARSHIPS**

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Alfred P. Sloan Scholar	July 2017
USF Presidential Fellowship	March 2017
GEM Full Fellowship	
March 2017	
John W. and Mittie Collins Engineering Scholarship	June 2016
J. Fred and Lilly C. Wilkes Scholarship	March 2016
Ronald E McNair Scholar	March 2016
Erma R. Ayres Scholarship	March 2015
University of Florida University Scholar	March 2015
Benjamin A. Gilman International Scholar	May 2014
NSF Florida-Georgia Louis Stokes Alliance Scholar	January 2014
University of Florida Honors Program	August 2013
West Port High School Salutatorian	June 2013