

# Megan G. Smithfield

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## OBJECTIVE

Aspiring researcher with extensive undergraduate experience and leadership. Value organizations focused on professional development and organizational growth.

## EDUCATION

### **Dual Degree, with honors:**

### **Bachelor of Science (B.S.) in Mathematics, and**

### **Bachelor of Arts (B.A.) in Modern Languages with a Concentration in Spanish**

Winthrop University - Rock Hill, SC

August 2016 to May 2020

- Ronald E. McNair Scholar Alumna

### **Study Abroad Student in Spanish Language, Literature, and Culture**

Universidad de Sevilla - Sevilla, Spain

September 2018 to December 2018

## LANGUAGES

- English - Native Speaker
- Spanish - Fluent
  - Obtained Intermediate High Certification from Oral Proficiency Interview, or OPI, in April 2019
- Korean - Beginner
  - Can read and write Hangul and communicate at an elementary level

## WORK AND RESEARCH EXPERIENCE

### ***Honors Undergraduate Thesis Researcher***

Winthrop University Honors Program - Rock Hill, SC

August 2019 to May 2020

- Research examined improving Spanish pronunciation in beginner-level Spanish students using tongue twisters to improve their Spanish /p/ and /r/
  - Fall semester, 2019: created tongue twisters, witnessed student practice and took notes, and collecting speech data for pre- and post-practice recordings
  - Spring semester, 2020: cleaned speech data using Praat and analyzed data using SPSS, conducted a literature review explaining motivation for research and justification of results and completed writing undergraduate thesis as part of honors program
- Presented research findings in poster format online at International Annual Pronunciation in Second Language Learning & Teaching Conference in June 2021

### ***Academic Success Center Peer Tutor***

Winthrop University Academic Success Center - Rock Hill, SC

January 2017 to May 2020

- Tutored mathematics and Spanish courses: Calculus II, applied college algebra, elementary Spanish II, and intermediate Spanish I
- Obtained Levels 1 and 2 International College Reading and Learning Association, or CRLA, tutoring certification

- Achieved Academic Success Center Level 3 Certification through a service project, “Tutee Seminars”
  - Recommended software, which was especially helpful for mathematics courses such as. Minitab and Desmos graphing calculator, and other learning materials to complement tutoring such as Khan Academy
  - Prepared and facilitated material for the respective collaborative project and solely hosted several seminar sessions
- Reviewed class material with students by:
  - Discussing concepts from textbook, mainly for Spanish
  - Working solutions to problems for Mathematics

### ***Mathematics Teaching/Laboratory Assistant***

Winthrop University Department of Mathematics - Rock Hill, SC

August 2017 to December 2019

- Assisted with in-person office hours and proctoring exams for both introductory discrete mathematics and applied college algebra hybrid courses with online homework
- Reviewed class material with students by:
  - Discussing concepts from online textbooks and lectures
  - Working solutions to problems or explaining online hints
  - Reviewing study and practice worksheets

### ***Undergraduate Artificial Intelligence and Computational Linguistics Researcher***

Computational Sensing for Human-centered AI REU at RIT; NSF - Rochester, NY

May 2019 to August 2019

- Used Magic Leap One mixed reality goggles to communicate with participants using both face-to-face and computer-generated avatars created with Unity
- Completed speech analyses using Microsoft Azure for ASR text, Praat, and syntax trees
- Oral presentation conducted at end of research experience to convey findings

### ***Undergraduate Data Science Researcher***

Winthrop University Department of Mathematics - Rock Hill, SC

January 2019 to May 2019

- Completed research course in time series data analysis using R and comprehensive report explaining analyses and interpretation of public precipitation data

### ***Undergraduate Statistics Researcher***

Winthrop Department of Mathematics - Rock Hill, SC

January 2018 to May 2019

- Completed literature review for Wins Above Replacement, WAR, statistics in baseball and continued research in Spring 2019 by using baseball players’ salaries to predict WAR in a simple linear regression model
- Presented and won presentation award for presentation at Winthrop SOURCE Research Symposium

### ***International Data Science Intern***

ec2ce - Sevilla, Spain

October 2018 to December 2018

- Analyzed and processed large sets of data using R
- Read scientific articles, conference papers, or other sources of research to identify emerging

analytic trends and technologies for time series

- Tested, validated, and reformulated models to ensure accurate prediction of precipitation and agricultural yields
- Improved Spanish proficiency via presentations on findings, gained cultural knowledge of the work environment in Spain, and cross-cultural communication skills

### ***McNair Scholar and Summer Researcher***

Winthrop University Ronald E. McNair Scholars Program - Rock Hill, SC

May 2018 to July 2018

- Completed research on controlling the spread of cholera through disinfection, vaccination, and quarantine through a mathematical model by adding a quarantine component during McNair Scholars Summer Research Experience
- Determined the significance of quarantine on the basic reproductive ratio by testing different quarantine rates
- Presented research findings at National McNair Scholars conference in Atlanta, GA at the end of June 2018

### ***Winthrop Initiative for STEM Educators (WISE) Intern***

Winthrop Initiative for STEM Educators (WISE) Program -- NSF Noyce - Rock Hill, SC

May 2017 to June 2017

- Completed research on networking the flow of water through Augusta, GA using graph theory and terminology
  - Presented research findings in poster format at UNCG Mathematics and Statistics Conference in November 2017
- Obtained Project Water Education for Teachers (WET) certification
- Shadowed in middle and high school mathematics classrooms in local Title I schools

### ***TRiO Mathematics Tutor***

Winthrop University TRiO Program - Rock Hill, SC

January 2017 to May 2017

- Reviewed class material with students by discussing concepts from textbooks and lectures, working solutions to problems, and reviewing study and practice worksheets for Calculus II and all other lower level mathematics courses

## **PUBLICATIONS**

### ***Determining Pronunciation of /p/ and /r/ in Spanish 101 students Using Spanish Tongue Twisters (Trabalenguas)***

April 2020

Published through Winthrop University Honors Program as part of Honors Thesis Research requirements. The thesis includes an introduction to tongue twisters and why they would be significant for improving beginner Spanish speakers' pronunciation, significance of tongue placement and how this effects the pronunciation of letters that sound different in different languages, how the data was collected and measured, data cleaning and analysis, and findings.

### ***Quantifying Engagement Levels in Interaction with a Human vs. an Avatar Interlocutor***

April 2020

Published in Winthrop Ronald E. McNair Scholars Bulletin to summarize research completed at AI REU at RIT.