

## What do we want to know?

We want to understand how the type of language and timing of language input (early or later) impact number knowledge. For this part of the research, we studied **404** children from four groups, ages 3-9.

GROUP	CHILDREN	CRITERIA
EARLY ASL	91	DEAF/HARD OF HEARING DEAF PARENTS IMMEDIATE AND FULL ACCESS TO AMERICAN SIGN LANGUAGE (ASL)
LATER ASL	90	DEAF/HARD OF HEARING HEARING PARENTS LATER AND/OR REDUCED ACCESS TO ASL
EARLY ENGLISH	124	HEARING HEARING PARENTS IMMEDIATE AND FULL ACCESS TO ENGLISH
LATER ENGLISH	99	DEAF/HARD OF HEARING HEARING PARENTS LATER AND/OR REDUCED ACCESS TO ENGLISH USING COCHLEAR IMPLANT OR HEARING AIDS

## Meet Two of Our Deaf Research Assistants



**Kurt Gagne** Based at Gallaudet University, Kurt is studying Early Childhood Education with the goal of working with deaf children around the world. In addition to working with the SLaM team, Kurt has traveled to Nicaragua several times to collect data with Deaf children and adults. He currently lives in the Washington, DC area with his wife and children.



**Richard Bailey** A graduate of the Delaware School for the Deaf, Richard joined the SLaM team in 2019. He has served the deaf/hard of hearing community for many years, providing educational advocacy, community and services development, and project management. Richard has a Master's degree in African American Studies from Boston University, and currently lives in western North Carolina with his wife.

## Where did we go?

Our research assistants traveled to **35** locations including schools, libraries, homes, and more across the United States.

## How did we measure number knowledge?

We played a game called "Give-a-Number" that tells us what children know about number words and signs (e.g. what the number or sign "three" means).



"Give-a-Number" Children are asked to put a specific number of fish into a "pond" and count them

## What have we learned?

- **Knowing how to count is critical:** The better the child's number knowledge (the number words used by the child when counting), the better he/she performed on the Give-a-Number task.
- **Either Spoken English and/or ASL can effectively support number development:** Overall, children, regardless of the language they are using, perform similarly when asked to put fish in a bowl.
- **Timing matters:** Children who are exposed to language from birth, whether ASL or spoken English, perform better when asked to put a specific number of fish in a bowl.
- **Later exposure to language impacts overall performance on the Give-a-Number task:** Some children with later exposure to language develop typically, however, overall performance for Give-a-Number is lower and more variable in these children.

**Therefore, EARLY and full access to ANY LANGUAGE is the key to optimal number knowledge.**

## What are our next steps?

- We are continuing to analyze the data that you contributed.
- We are creating activities for parents of children who are deaf/hard of hearing to support their child's number development.
- We are currently preparing these results for publication — **STAY TUNED!**



This research is conducted by Dr. Marie Coppola and is supported by the National Science Foundation. If you are interested in our study or have questions, please contact [slam\\_uconn@uconn.edu](mailto:slam_uconn@uconn.edu).

Thank you for your participation and support. We can't do this work without you!

To learn more and/or participate in our research, go to: <https://slam.uconn.edu/>.