# BUFFALO EARLY LEARNING LAB

## Annual Newsletter | February 2025

In 2024, we continued studies that we began in 2023 and also introduced a few new ones! None of our work would be possible without your help and we are so thankful for all of our wonderful families who have made this research possible!








Buffalo EARLY Learning LAB

# ABOUT US

The Buffalo Early Learning Lab was founded at UB in 2022 and we began collecting data in May 2023. Since then, we have spent lots of time doing research and expanding the lab!

For the Spring 2025 semester, we have 11 undergraduate research assistants, a PhD student in her second year, and a full-time lab manager, all led by Dr. Federica Bulgarelli!

We study how infants and kids (and adults) learn when there is variability in their environment. For example, multiple talkers, languages, contexts, speech from siblings, etc!

We recruit families from all over the Buffalo area and even all over the country for our Zoom studies! We also run studies with undergraduate participants to see how patterns may be similar or different in kids versus adults.

We are located in Park Hall on UB's North Campus but we sometimes invite families to South Campus as well.

# Speech From Older Kids

The majority of research on language development has asked what infants hear from their parents. However, lots of infants have older siblings or cousins, or attend daycare, and therefore also hear language from other children! In a set of ongoing studies, we want to learn how speech from children influences language development.

Lyla & Charles | Image courtesy of Katie

## What do infants think about speech from older children?

This two-part study investigates how 9-15 month-olds listen to and understand speech from older kids and adults. We started collecting data for this study in May 2023 and it's still going strong!

Delaney Rozler | Image courtesy of Teresa Rozler

First, we play babies excerpts from children's books (like *The Very Hungry Caterpillar*) read by adults and 5-year-olds. We want to know which type of speech they spend more time listening to! **(Do they prefer one over the other?)**

Then we show them two pictures on a screen and they hear an adult or a child tell them to look at one of them. We measure how fast infants look at the right object - **are they faster to look at the correct image when directed by an adult or a child?**

Gavin Gray
Image courtesy of Samantha Gray

When your child turns 18 months, we also ask families to fill out another questionnaire about the words they know. This way, we can see how much their vocabulary has grown in a few months (it's fun for parents to see too!)

## How do toddlers process speech from adults and older kids in the presence of background nosie?

In this study led by PhD student Marzie, we bring in kids who are between 30-36 months old for an eyetracking task.

Lily | Image courtesy of parent

Similar to our study with the younger babies, we show your child two pictures on a screen with an adult or child voice telling them to look at one of them. We measure their looking time to see whether they are faster to look at the correct image when directed by an adult or a child. Some participants hear these sentences in silence, but another group hears them with some background noise (like children's music) taken from recordings of children's actual lives! In this case, we are wondering whether toddlers find processing speech in noise harder, or if they are so used to it that it does not make listening any more difficult!

# Sibling Play Sessions

Over the summer, we started our play sessions on South Campus! We record sibling pairs and their caregiver playing for 15 minutes so we can see how babies and their older siblings play together!


For example:
*Who/what is each person looking at?*
*How do older siblings talk to and around younger siblings?*

Chelsea, Leo, and Ezekiel

Leading this project has been so exciting! Growing up, I didn't have many other kids in my family, so it's a lot of fun to see how these siblings play and interact, especially in a more naturalistic setting.

Most of the time the sibling interactions are more interesting than most TV shows I've seen!

- Gabi (Undergraduate Research Assistant)

Cynthia, Elena, and Niko

Landon, Kylie, and Taylor

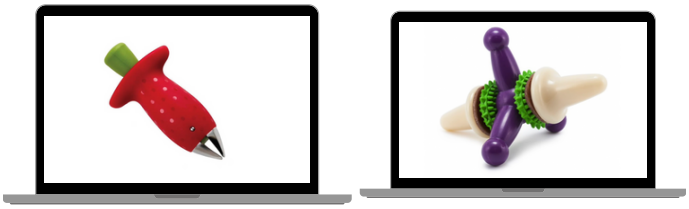
# Learning Words From Multiple People

Words sound different every time they are said, even by the same person! Previous research on this topic shows that this variability can be helpful at times but can also make word learning more challenging. We are investigating how infants and preschoolers learn words from one or multiple people.

## How do infants learn words from multiple people?

This Zoom study is a followup to similar research with older infants. Here, we teach 11-12 month-olds two new word-object pairs by showing them on the screen one at a time, labeled by one or multiple speakers, until they get bored (when they look away faster, they're thinking, "I know what this is, show me something else!").

**Learning Phase**

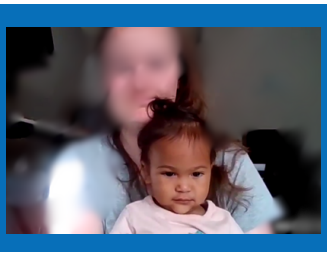


Neem Lof

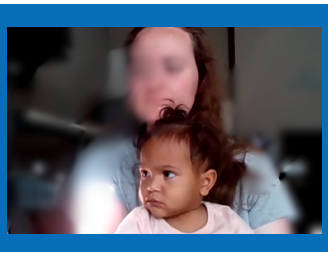
**Test**

Lof

If participants reingage attention here, that tells us they learned that the red object is called a neem!



Participant looking attently



Participant gets bored and looks away

Then we switch one of the pairings (we might show the red object with the word for the purple object). If infants re-engage attention and look longer, they're thinking, "hey that's not right!" (they successfully learned those words). **How do infants who hear words from one versus multiple people learn differently?**

# Learning Words From Multiple People

In addition to the effects of talker variability on word learning, we are also interested in how preschoolers make choices about learning and how that affects what they learn. Research suggests that preschoolers know how to make choices that maximize what they learn, here we wonder whether that extends to hearing words from multiple people!

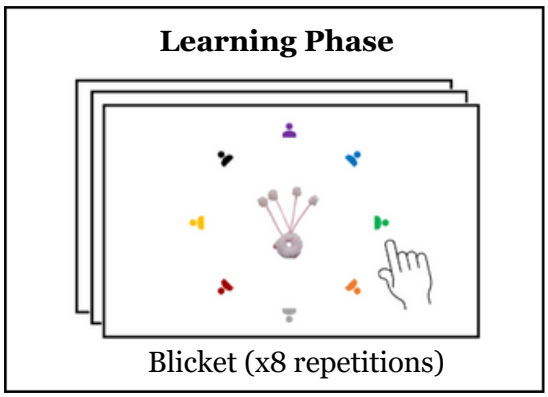
## How do preschoolers learn new words?

This study is a tablet game for 3 to 4 year olds! We are interested in whether preschoolers want to learn new words from multiple people (maybe it's more fun to hear multiple voices!) and how that influences what they learn about the words.

Preschoolers are first introduced to each speaker, then they see a new picture on the screen and are asked to choose who they want to hear it from.

How do we know if they learned the words? They are asked to label them out loud and to match them to corresponding pictures on the screen!

Clarke | Image courtesy of Samantha




We are also conducting a very similar study with undergrads at UB to see whether these patterns are similar across development!

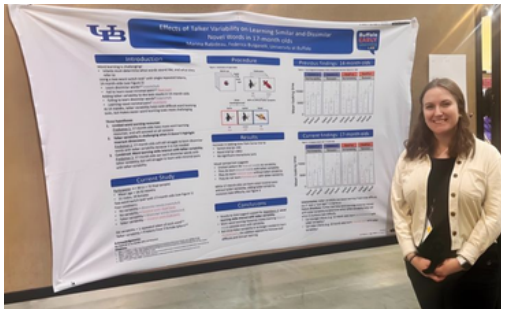
The first group of participants got to choose who they heard the words from (each person once, one person eight times, something in between?). We call this the "active" choice condition.

The next group clicks speakers in the order that a participant from the first group chose! We call this the passive choice condition. **Do kids learn differently when they have this active choice?**

# 2024 Highlights

## Conferences!

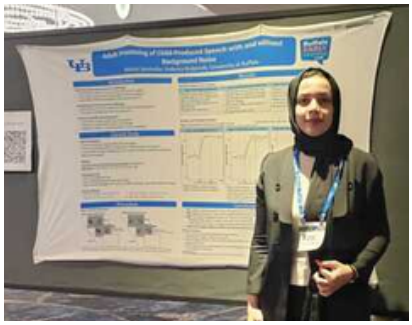
Members attended a total of 4 conferences in 2024! Sharing our findings is an important part of research!



*Effects of Talker Variability on Learning Similar and Dissimilar Novel Words in 17- month olds*

Presented by Marina (Lab Manager) at Cognitive Development Society Conference
March 2024 | Pasadena, CA

Click here or scan QR code to view poster!



*Adult Processing of Child-Produced Speech with and without Background Noise*

Presented by Marzie (2nd year PhD student) at Psychonomic Society Conference
November 2024 | New York, NY

Click here or scan QR code to view poster!

*Infants' comprehension of speech produced by children*

Presented by Dr. Federica Bulgarelli at International Congress of Infant Studies Conference
July 2024 | Glasgow, Scotland

Click here or scan QR code to view poster!

We had our first group of graduates in May 2024!

Congratulations to Bri, Maddie, and Amanda!

We received grants from NIH and Language Learning to continue our studies!

# Looking Ahead

We are excited to attend the **Society for Research in Child Development**'s 2025 conference in May! Dr. Bulgarelli, Marina, Marzie, and Gabi will be traveling to Minneapolis to present some of our latest findings! *Learn more about SRCD here*

We're always excited for new members to join the lab! And of course, lots of kiddos!

# Thank you to all our families who have participated so far! Whether you've done one study or four, we couldn't do it without you! Together, we are able to understand more about kids' language development and are advancing science!

We are so excited to continue learning with you in 2025! We have lots of fun studies going on for kids of different ages and are thrilled to be able to share our findings with you!

FYI- we currently have studies for kids from 9 months old up to 5 years!!

UB CHILDatabase

If you know anyone with kids up to age 17 who might be interested in participating in studies at UB, have them sign up for the UB CHILDatabase by scanning this QR code or clicking the link here! UB CHILDatabase