

Hello from the Wisconsin Intelligibility, Speech and Communication (WISC) Lab! So many exciting projects are ongoing and the team continues to grow in leaps and bounds! Out of that excitement comes this newsletter. We are so happy to share this update with our families!



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Waisman Center
1500 Highland Ave.
Madison, WI 53705

A note from Dr. Hustad

As always, thank you to all the families who continue to give their time and commitment to this project. Your efforts are contributing ground-breaking insight into our understanding of how communication develops in children with cerebral palsy (CP). We hope this newsletter finds you well! We are looking forward to seeing many of you for visits at lab over the summer months. Please check out these options for family fun in the Madison area!

Splash Parks: There are three splash parks located in Madison, as well as one in Fitchburg and one in Middleton. The splash parks are zero-depth and fully accessible. <https://www.cityofmadison.com/parks/splashpark>

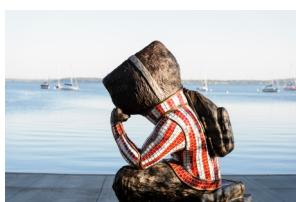


Dane County Farmers' Market: Held around the capitol square on Saturday mornings, and on MLK Jr Blvd on Wednesdays, the Dane County Farmers' Market is the largest producer-only farmers' market in the country. Fruits, veggies, cheeses, honey, maple syrup, flowers/plants, bakery items and more. It's a Madison tradition! <https://dcfm.org>

Henry Vilas Zoo: Henry Vilas Zoo is located near the UW-Madison campus and is open 9-5 every day. There is no charge for admission! <http://www.vilas zoo.org/>



UW-Madison Union Terrace: Stop in for ice cream, a concert, or sailboat races! A list of events can be found at <https://union.wisc.edu/visit/terrace-at-the-memorial-union/>



State Capitol Building: The Wisconsin State Capitol is open to the public with free tours offered daily! Wheelchair-accessible entrances located between the wings of the capitol. <https://legis.wisconsin.gov/about/visit>

Dr. Hustad continues to direct the WISC lab and is enjoying her role as Chair of the Communication Sciences and Disorders Department at the UW. In addition, Dr. Hustad is serving as the co-director of the Clinical Translation Core at the Waisman Center. Her three children also keep her quite busy!

Welcome to...

The WISC Lab welcomes **Maggie Jensen** and **Sharon Tang**!

Maggie is finishing her Capstone year, during which she completed preparatory coursework in order to pursue a graduate degree in Speech-Language Pathology. Maggie will begin the Masters program at UW-Madison in Fall 2018 and is looking forward to learning more about commu-

nication skill development in children with developmental disabilities.



Sharon Tang joins us as a research intern for the upcoming months.

Sharon is a certified Speech-Language Pathologist and will be seeing many of the children who participate in the Speech Development Study, along with learning new procedures and protocols for evaluating the speech and language skills of children with cerebral palsy.



WISC Lab clinician pursues PhD



Michael is a familiar face around the WISC Lab!

Michael Molinaro is a speech-language pathologist who joined the WISC Lab in 2016 as coordinator of the Speech Development Study. We are excited to announce that Michael will begin coursework in the doctoral program in Communicative Sciences and Disorders this Fall! Michael's research interests include the use of augmentative communication

systems for children with complex communication needs and language/literacy development in young children who are minimally verbal. He hopes to explore new methods of assessment and/or intervention for these populations of children. Congratulations Michael! We are excited to see what you accomplish.

Oh, the places they'll go!

The WISC Lab is excited to send two new graduates out into the field!



Meredith Braza will complete her Bachelor of Science degree in Communication Sciences and Disorders in May.

Meredith is headed to UNC-Chapel Hill where she will pursue a graduate degree in Audiology. Good luck Meredith!

Michelle Straub will complete her Master of Science degree in Speech-Language Pathology in May. Michelle plans to work with pediatric populations, and has a special interest in working with parents and families in order to

maximize their child's participation at home and in the community. Congratulations Michelle!



Senior thesis update!

This year in the WISC Lab, Meredith Braza completed her senior thesis project examining the speaking rate and intelligibility of 26 children with CP across 5, 6, and 7 years of age. The purpose of this project is to understand how changes in speech intelligibility are related to changes in speaking rate in school-age children with CP.



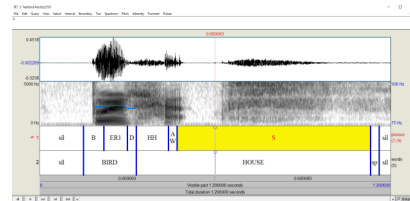
Bird house.

Meredith first obtained these children's audio samples, which were the sentences each child repeated from the iPad in the visit room

(such as "doctor bag" and "the loud noise scared the cat away"). With a software program called Audacity, Meredith segmented these samples so each sentence had its own file. She also used Audacity to clean the samples by getting rid of noises in the background.

After the audio was segmented and cleaned, the WISC Lab brought in two adult listeners for each of the 26 children's visits. These adults spent 30 minutes listening to the child's speech and simply typing what they think the child said. The typed answers allowed us to calculate intelligibility!

Meredith also used a software program called Praat to listen to every segmented sentence and use a time stamp to mark exactly when the child



started and stopped speaking. This is how speaking rate was calculated. Meredith also combined intelligibility and speaking rate into a new measure called intelligible words per minute to describe the intelligibility of a child over a short time period.

Currently, Meredith is preparing a poster of her results to present to fellow undergraduates completing similar projects across campus. Meredith is also writing a scientific paper about her project that hopefully will be published later this year! Stay tuned!

Favorite things to learn in the lab

We asked student members of the WISC Lab to share some of the things they most enjoy about their experience in the lab!

Graduate student Clare Koopmans says, "I love meeting the families who come in for annual visits. They are so dedicated and I learn so much from each visit."



Junior Alex Maloney says, "I've been amazed to learn about the

amount of time it takes to get analyzable pieces of data from long video recordings. The process is intense but each task is really interesting."

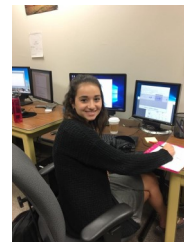
Graduate student Jenn Soriano says, "I like seeing how the WISC Lab uses different kinds of software to process all the data, and to automate the way we collate information."



Sophomore Abby Olivieri says, "What I have learned the most about is how the WISC Lab makes use of longitudi-

nal data to learn about development in children with disabilities, and how all the different aspects of development are inter-related."

Graduate student Maggie Jensen says "Working in the WISC Lab has helped me understand more about how we use research findings to develop and validate new intervention strategies."



Sophomore Emily Bott says, "I like learning about how to use existing literature to generate new research questions."

Exciting work, powerful findings

Two studies that will soon be submitted for publication are described below!

The effect of behavioral speech intervention on speech intelligibility of children with cerebral palsy

Over the past 18 months, some of our participants have been piloting a new therapy technique focused on helping children reduce their speaking rate. Existing literature shows that using a slow rate of speech helps improve the intelligibility of adults with speech impairments, and the goal of this pilot study is to see if this is also true for children with CP. The children in this study who experienced the biggest increase in speech intelligibility were children who had habitual speech intelligibility less than 80%. Generally speaking, the more a child was able to reduce their rate, the

greater the benefit. It is likely that children who decrease their speaking rate are producing word boundaries more clearly, which helps their communication partner identify words, as well as giving the communication partner more time to process the meaning of the message.

Speech intelligibility in children with cerebral palsy: why measurement matters

In the WISC Lab, we measure speech intelligibility by having adult listeners (who don't know the children) try to write down what they think a child is saying. The listener can only hear the words and sentences the child produced and they don't have any visual information to facilitate their understanding. However, there are many other methods of measuring speech intelligibility

and they all rely on different stimuli and have different environmental contexts. The goal of this study was to try and determine which common measures of speech intelligibility are most similar, which are most sensitive to severity of speech impairment, and which measures are most successful at detecting change over time. Results from this study indicate that it is important to use a variety of measurement techniques to fully capture and describe a child's speaking ability.



Access all published articles at:
<https://kidspeech.wisc.edu/our-publications/>

Speech Development Study update

The Speech Development Study is on a roll!



This study will establish normative data on speech intelligibility for children who are typically developing, providing bench-

marks that will have a significant impact on our research for children with CP. The children who come for the Speech Development Study do many of the same tasks as the children with CP, but only make a one-time visit.

Our goal is to see over 400 children between the ages of 2 ½ and 7, and we are half of the way there! Can you help us spread the word? We would also be thrilled if any siblings of our participants

with CP were interested in participating.

Thanks for your continued support in helping us reach our goals.



<https://kidspeech.waisman.wisc.edu/dms/TDenroll/>