SOCIAL AND AFFECTIVE NEUROSCIENCE OF AUTISM LAB

Official Laboratory Newsletter

WINTER, 2022

YALE CHILD STUDY CENTER

Dr. Chelsea Morgan, PsyD, plays with daughter of Research Assistant Brigid Gordon.

From the Director:

Dr. Katarzyna Chawarska is the Director of the Social and Affective Neuroscience of Autism Program and Yale Toddler Developmental Disabilities Clinic at the Child Study Center, as well as the Emily Fraser Beede Professor of Child Psychiatry at Yale School of Medicine.

Hello from the SANA Lab as we approach the Winter holiday season! We are pleased to bring you a sixth issue of our Newsletter, sharing events from a very busy and exciting 2022. We continue seeing families for both clinical and research visits, with our space and procedures adjusted for safety.

In this edition we include highlights from 2022 such as our group's trip to Austin Texas for the International Meeting for Autism Research (p. 2-4), our involvement in the ASRC's 25th Annual Walk for Autism (p. 10), and our Annual Autism Summer Institute (p.11-12).

Over the summer we were excited to welcome several new staff (p. 7) and we feature Spotlights from our current staff (p. 8-9). We wish all the best to our outgoing Research Fellows as they began their graduate studies in the fall (p. 6)!

As always, we are indebted to all of you for your continued interest and engagement around our research, clinical, and education missions. We wish you all joyful and healthy holidays!

INSAR 2022

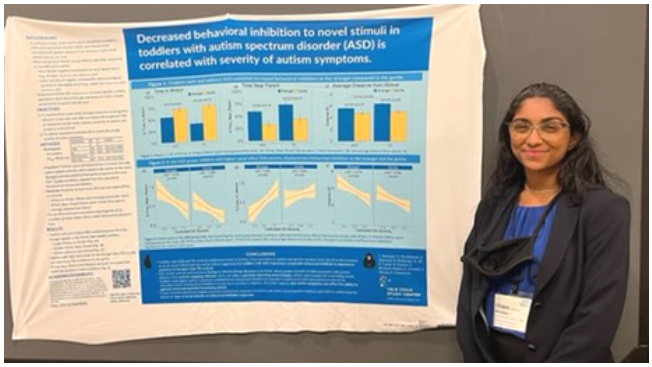
The International Society for Autism Research (INSAR) Annual Meeting took place this year as a hybrid virtual/in-person event in May 2022 in Austin, Texas. The SANA Lab was well represented and had many presentations and panels to present the findings of our exciting research. These presentations would not be possible without the support and commitment of our wonderful families!

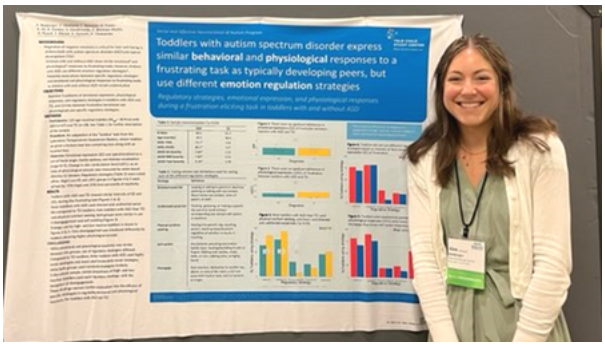
Greetings from Austin!

During the 4-day conference, SANA Lab attendees viewed and presented posters, attended panel presentations, and listened to fascinating keynote speakers on a variety of topics related to current research in the field. It was exciting to meet others doing similar work, and to have the opportunity to discuss their research ideas and learn from them. Exploring the city of Austin was not too bad either – there was plenty of delicious food, great artwork, and lots of cowboy boots!

SANA Lab INSAR Presentations

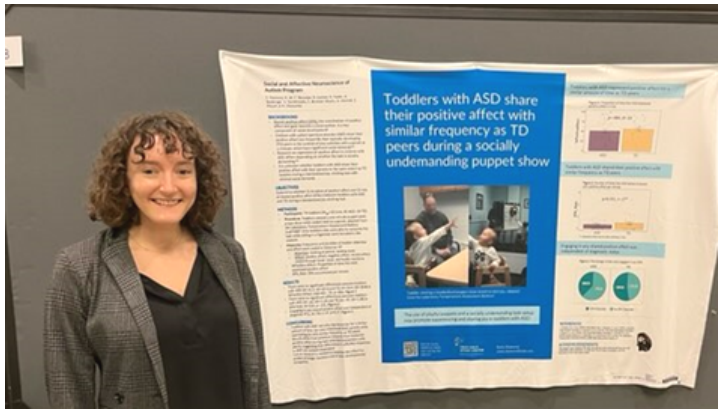
Quantifying Behavioral Inhibition to Unfamiliar Social and Non-Social Stimuli in Toddlers with ASD. C. Banarjee, V. Donthireddy, E. Diamond, A. Boxberger, K. All, R. Foster, B. Gordon, E. Brennan-Wydra, A. Vernetti, S. Macari, K. Chawarska, K. (2022).

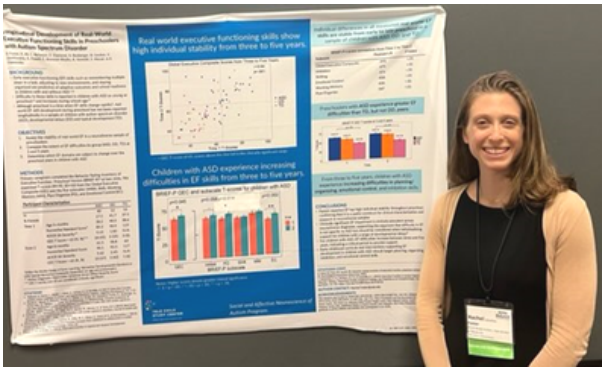




Regulatory Strategies, Emotional Expression, and Physiological Responses during a Frustration Eliciting Task in Toddlers with and without ASD. A. Boxberger, E. Diamond, C. Banarjee, R. Foster, K. All, B. Gordon, V. Donthireddy, E. Brennan-Wydra, K. K. Powell, S. Macari, A. Vernetti, K. Chawarska (2022).

Sharing Joy during Puppet Shows: Toddler with Autism Spectrum Disorder Share Positive Affect as Frequently as Typically Developing Controls. E. Diamond, K. All, B. Gordon, C. Banarjee, R. Foster, A. Boxberger, V. Donthireddy, E. Brennan-Wydra, A. Vernetti, S. Macari, K. Chawarska (2022).





Longitudinal Development of Real-World Executive Function Skills in Preschoolers with Autism Spectrum Disorder. R. Foster, K. All, C. Banarjee, E. Diamond, B. Gordon, V. Donthireddy, K. K. Powell, E. Brennan-Wydra, A. Vernetti, S. Macari, K. Chawarska (2022).

- **Symptoms of Executive Dysfunction and ADHD Are Linked with Poorer Adaptive Functioning in 3-Year-Olds with ASD.** K. K. Powell, S. Macari, E. Brennan-Wydra, H. Feiner, M. Butler, D. M. Goncalves Fortes, A. Boxberger, C. Morgan, M. Lyons, M. S. Torres-Viso, K. Chawarska (2022).

- **A Demonstration of Limited Attention to Parents' Faces during a Live Eye-Tracking Task in Toddlers with Elevated Autism Symptoms.** A. Vernetti, C. Banarjee, A. Boxberger, E. Diamond, K. All, S. Macari, K. Chawarska (2022). P

- **Functional Brain Development during Neonatal and Infancy Periods in Neurodiverse Populations. K. Chawarska (2022).** Panel presented at International Society for Autism Research Annual Meeting, Austin, TX.
    - *Establishing a Platform for Early Childhood Development: MRI Studies of the Structure and Function of the Neonatal Brain* (D. Fenchel, J. Ciarrusta, A. Uus, M. Deprez, R. Dimitrova, J. V. Hajnal, E. Hughes, A. Javed, C. Nosarti, D. Murphy, T. Arichi, A. D. Edwards, D. Batalle, J. O Muircheartaigh, G. M. McAlonan)
    - *Salience Network Functional Connectivity in Neonates with High Likelihood of Autism* (D. Scheinost, J. Chang, C. Lacadie, E. Brennan-Wydra, R. T. Constable, L. R. Ment, K. Chawarska)
    - *Predictive Links between Salience Network Connectivity and Attention to Social Partners in Neonates with Familial History of Autism* (A. Vernetti, R. Ray, D. Scheinost, L. R. Ment, S. Macari, H. Neiderman, C. Nutor, C. D. Gershman, H. Feiner, R. Foster, R. T. Constable, J. Chang, K. Chawarska)
    - *Altered Theta-Beta Ratios in Infants at Elevated Likelihood of Neurodevelopmental Disorders* (J. Begum Ali, A. Goodwin, L. Mason, G. Pasco, T. Charman, M. H. Johnson, E. J. Jones)

Recent Publications

In addition to conference presentations, members of the SANA Lab have also been busy writing papers! Check out a few below:

- **Early predictors of language skills at 3 years of age vary based on diagnostic outcome: A baby siblings research consortium study**. Pecukonis M, Young GS, Brian J, Charman T, Chawarska K, Elsabbagh M, Iverson JM, Jeste S, Landa R, Messinger DS, Schwichtenberg AJ, Webb SJ, Zwaigenbaum L, Tager-Flusberg H. Autism Res. 2022 Jun 1; 2022 Jun 1. PMID: 35652157.

- **Patterns of Intervention Utilization Among School-Aged Children with Autism Spectrum Disorder: Findings from a Multi-Site Research Consortium.** Sridhar A, Kuhn J, Faja S, Sabatos-DeVito M, Nikolaeva JI, Dawson G, Nelson CA, Webb SJ, Bernier R, Jeste S, Chawarska K, Sugar CA, Shic F, Naples A, Dziura J, McPartland JC. Res Autism Spectr Disord. 2022 Jun; 2022 Mar 24. PMID: 35444715.

- **Identifying Age Based Maturation in the ERP Response to Faces in Children With Autism: Implications for Developing Biomarkers for Use in Clinical Trials.** Webb SJ, Emerman I, Sugar C, Senturk D, Naples AJ, Faja S, Benton J, Borland H, Carlos C, Levin AR, McAllister T, Santhosh M, Bernier RA, Chawarska K, Dawson G, Dziura J, Jeste S, Kleinhans N, Murias M, Sabatos-DeVito M, Shic F, McPartland JC. Front Psychiatry. 2022; 2022 May 9. PMID: 35615454.

- **Elevated symptoms of executive dysfunction predict lower adaptive functioning in 3-year-olds with autism spectrum disorder.** Powell K, Macari S, Brennan-Wydra E, Feiner H, Butler M, Goncalves Fortes D, Boxberger A, Torres-Viso M, Morgan C, Lyons M, Chawarska K. Autism Res. 2022 Apr 6; 2022 Apr 6. PMID: 35388596.

- **Atypical Intrinsic Hemispheric Interaction Associated with Autism Spectrum Disorder Is Present within the First Year of Life**. Rolison M, Lacadie C, Chawarska K, Spann M, Scheinost D. Cereb Cortex. 2022 Mar 4. PMID: 34424949.

- **Attention to audiovisual speech does not facilitate language acquisition in infants with familial history of autism.** Chawarska K, Lewkowicz D, Feiner H, Macari S, Vernetti A. J Child Psychol Psychiatry. 2022 Mar 4; 2022 Mar 4. PMID: 35244219.

- **What are we optimizing for in autism screening? Examination of algorithmic changes in the M-CHAT.** Schjølberg S, Shic F, Volkmar FR, Nordahl-Hansen A, Stenberg N, Torske T, Larsen K, Riley K, Sukhodolsky DG, Leckman JF, Chawarska K, Øien RA. Autism Res. 2022 Feb; 2021 Nov 26. PMID: 34837355.

Saying goodbye to our 2020-2022 fellows!

Thank you for all your wonderful work in the lab and with our families. We're so excited to see what is next for you!

Chitra Banarjee
Chippy is pursuing a dual degree MD/PhD program at University of Central Florida. She is starting her medical education while completing research rotations. She is interested in harnessing big data using computational tools to discover the biological pathways of different types of cancer.

Emily Diamond
Emily has begun a doctoral program in Social Psychology at the University of Michigan. She works under the mentorship of Dr. Amie Gordon, studying emotional processes in close relationships. Emily is specifically interested in using behavioral and physiological methods to better understand the mechanisms involved in connecting with a social partner.

Rachel Foster
Rachel has begun a doctoral program in Developmental Psychology this fall at the University of California, Davis under the mentorship of Dr. Yuko Munakata. She continues investigating the development of executive functions, attention and learning during preschool and the transition to formal schooling.

Welcoming our new staff!

We have two fantastic new additions to the SANA Lab team! Read about their academic and professional history, and learn some fun facts!

Favorite children's book: Nora's Stars
Favorite snack as a child: Salami on white bread
Favorite childhood toy: Rope swing in the backyard

Catherine Bianco

Cat joined the SANA lab in summer 2022 as a research fellow in Developmental Psychopathology and Social Neuroscience. She is interested in how early motor transitions - like learning to sit, crawl, and walk - help babies learn new skills as they explore their environment and interact with others. Her research experience started in Karen Adolph's lab at NYU, where she pursued a BA in psychology with a focus on motor and perceptual development. After graduating in 2020, she worked in Dima Amso's lab at Columbia and contributed to longitudinal studies of parental stress and infant development during the pandemic. Cat will pursue a PhD in developmental cognitive neuroscience starting in fall 2024 and work primarily with families who have elevated likelihood of neurodevelopmental disorder. Her research will illustrate how motor development creates new learning opportunities for babies in the first years of life.

Emily Hong

Before starting at SANA, Emily was finishing her undergraduate studies at the University of Pennsylvania, where she majored in psychology. She worked in several different labs that researched child and adolescent development and mental health. Emily conducted her senior honors thesis on the relationship between parental emotion scaffolding and child emotion recognition and expression. In the future, she hopes to pursue a PhD in clinical psychology!

Favorite children's book: Magic Tree House
Favorite snack as a child: Fruit of any kind!
Favorite childhood toy: Littlest Pet Shop

Current Staff Spotlights

Please enjoy this spotlight on our current Research Assistants and Fellows who keep the lab moving so smoothly and their beautiful work with our families!

Katherine All

Before starting at SANA, Katherine attended the University of Pennsylvania where she worked in Dr. Rebecca Waller's lab studying moral and emotional development in children. She hopes to obtain her PhD in clinical psychology and go on to work with children with externalizing problems such as disruptive behavior disorders or ADHD.

Favorite children's book: The Tale of the Faithful Dove
Favorite snack as a child: Animal Crackers
Favorite childhood toy: A small stuffed baby doll creatively named "Dolly"

Alex Boxberger

Alex is a Research Assistant in Clinical Psychopathology at the Social and Affective Neuroscience of Autism (SANA) Program at the Yale Child Study Center. She graduated Cum Laude from the Robert D. Clark Honors College at the University of Oregon in 2020, with departmental honors and a B.S. in Psychology, and a minor in Spanish. Her research interests include links between early neurodevelopment and later clinical and behavioral outcomes in typically and atypically developing populations.

Favorite children's book: Winnie the Pooh
Favorite snack as a child: Goldfish
Favorite childhood toy: Baby piano

Favorite children's book: Pat the Bunny
Favorite snack as a child: Cheese Puffs
Favorite childhood toy: Walking toy dog on a leash

Veda Donthireddy

Veda graduated from Wellesley College in June 2021 and received a B.A. in Neuroscience with honors and a minor in Italian Studies. During her undergraduate years, Veda worked as a research assistant at Dr. Pawan Sinha's lab at M.I.T. where she worked on Project Prakash, a non-profit organization that treats and conducts research on congenitally blind children who received sight-restorative surgeries during childhood. While at Wellesley, Veda also founded and ran the Wellesley College Special Olympics Club under Special Olympics Massachusetts. She is currently a Developmental Neuroscience of Autism Fellow at the Yale Social and Affective Neuroscience of Autism Program

Brigid Gordon

Brigid Gordon has been with the SANA lab as a Research Assistant for just over a year. Before starting with the Yale Child Study Center, Brigid worked as a Registered Behavior Technician with teenagers with ASD. She graduated from Fairfield University in 2016 with a B.A. in Psychology.

Favorite Children's Book: The Stinky Cheese Man
Favorite Childhood Snack: Goldfish Crackers
Favorite Childhood Toy: Barbie dolls!

SANA Lab at the...

Last Spring, members of the Sana Lab attended the 25th Annual Walk for Autism, held by Autism Services and Resources Connecticut. The event was a huge success with over $160,000 raised to provide access and opportunities for people with Autism Spectrum Disorder. As a Showcase Sponsor, we shared information about our services with families and other providers. It was also a great opportunity to re-connect with families that have participated in our research in the past. We love to see our past participants all grown up! Click here to learn more about the resources provided by ASRC.

ASRC | AUTISM SERVICES & RESOURCES CONNECTICUT
navigating the spectrum

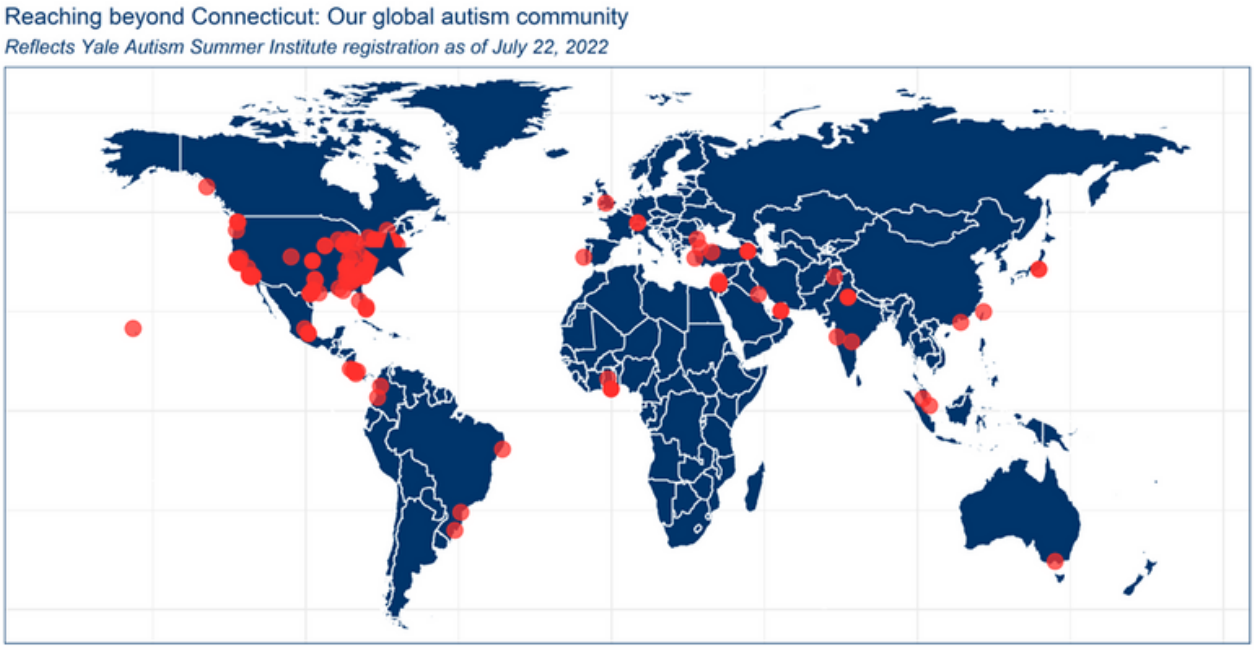
Yale Autism Summer Institute

7/26, 7/27 & 7/28/2022

Emma Brennan-Wydra, MSI

In July, the Yale Social and Affective Neuroscience of Autism (SANA) Program and the Yale Autism Center of Excellence (ACE) presented our annual **Yale Autism Summer Institute**. The symposium-style event was focused on **current research and clinical practices in autism spectrum disorder and related neurodevelopmental disorders**.

This year, the Yale Autism Summer Institute took place in a **hybrid format**, with talks held in person at the Yale Child Study Center as well as on Zoom. The event was open to students, trainees, researchers, clinicians, and families, and **over 400 people** from around the world signed up to attend! We were delighted to be able to interface with such a wide-reaching and varied community that is passionate about improving the lives of children with autism spectrum disorder and other complex neurodevelopmental disorders.



The three-day event featured 15 presentations given by researchers, parents of children with autism, and clinical service providers from the Yale Child Study Center and beyond. Some of my favorite presentations included:

Assessment of Autism Spectrum Disorder in Toddlers and Young Children
Chelsea Morgan, PsyD
Yale Child Study Center

Autism Diagnosis – A Parent's Perspective
Dannika Kemp Avent, MAIOP, MSID
Yale University Alumni Affairs & Development

Functional Brain Connectivity in Neonates and Its Links With Later Outcomes
Katarzyna Chawarska, PhD
Yale Child Study Center

Stereotypic Behaviors in Autism and Typically Developing Children
Thomas Fernandez, MD
Yale Child Study Center

Trauma-Informed Education and Support
Mariana Torres-Viso, PsyD, BCBA
Yale Child Study Center

CT Birth to Three Supports in the Home and Community: What Do They Look Like and Why?
Koleen Kerski, MS, OTR/L
Sabrina Crowe, MS, CCC/SLP
Office of Early Childhood, CT Birth to Three System

Why Verbs are Important

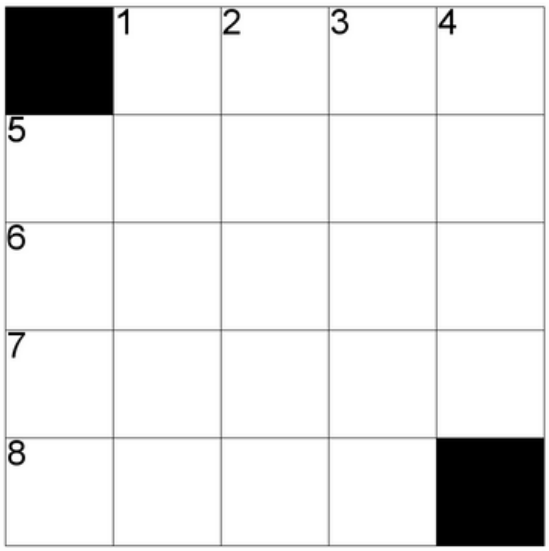
Verbs are important for early language development because they allow children to communicate about their experiences and are the building blocks for first sentences—you can't make a sentence without a verb. For young children with autism, verbs may be more challenging to learn versus concrete labels for familiar objects and people (nouns). Once your child understands and uses a small vocabulary of labels (approximately 50-100 words), begin to target verbs by simultaneously demonstrating an action (tickling your child) while saying the corresponding verb ("tickle"). In other words, you are showing your child what a given verb means while providing a verbal model.

I recommend starting with the 50 action words that young children tend to learn first and include: kiss, eat, drink, hug, dance, walk, wash, give, cry, tickle, open, blow, break, throw, play, get, look, bring, splash, ride, rain, snow, slide, hold, close, clap, cook, carry, fix, swing, fall, hit, wipe, put, watch, touch, show, catch, climb, run, jump, kick, clean, drive, swim, help, push, sing, pull, and pour. Use these action words in short sentences while you and your child are engaging in rich sensory-based experiences with materials (versus pictures). Comprehension of action words may also be established by using contrastive pairs of action words during activities. For instance, if targeting the verb "put" while playing with a shape sorter also teach the contrasting word, "take" ("I'm putting the block in;" "I'm taking the block out"). Remember, it will be important for your child to hear new action words multiple times and across different activities before they add them to their expressive vocabulary.

Fenson, L., Marchman, V. A., Thal, D. J., Dale, P.S., Reznick, J. S., & Bates, E. (2007). MacArthur-Bates Communicative Development Inventories (CDI): Words and Gestures. Brookes Publishing: Baltimore, MD.

Kids Page!

SANA Lab Mini Crossword!

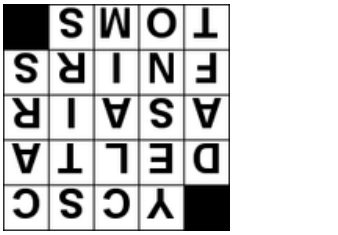


ACROSS

1. SANA Lab's home department (Abbr.)
5. Fourth letter of the Greek alphabet
6. As light ___ (almost weightless)
7. Baby- and toddler-friendly brain imaging method featuring a funny cap (Abbr.)
8. ___ of Maine (eco-friendly toothpaste brand)

DOWN

1. Kind of question with only two answers
2. State as fact
3. Mixes with a spoon
4. Automobiles
5. Silly



Participation opportunity

See the flyer below for more information on one of our newest studies!

Interested in Participating?

Call our Program Manager, Karen Franchi: *(203) 764-5933*
or email *karen.franchi@yale.edu*

Additional research participation opportunity:

Hannah Feiner, former Research Fellow at the SANA lab from 2019-2021, and current doctoral student studying Communication Sciences and Disorders at Northwestern University, is involved in an Early Intervention Research Group lab that is currently enrolling families in a telehealth communication intervention study for young children (21-31 months) with language delays.

Family Corner

We Want to Hear From You!

Let us know how your family is doing! You can send us updates, pictures, and cards to:

Yale Child Study Center
Developmental Disabilities Program
Social Neuroscience Laboratory
300 George St. Suite 900
New Haven, CT 06511

New contact info? Let us know with an email to **sanalab@yale.edu**

@SANAatYale

@SANAatYale

medicine.yale.edu/lab/chawarska/

Interested in Participating?

Call our Program Manager, Karen Franchi: *(203) 764-5933*
or email *karen.franchi@yale.edu*