

# SOCIAL AND AFFECTIVE NEUROSCIENCE OF AUTISM LAB

*SANA Lab Newsletter*



*Photo courtesy of Yale University and Jack Devlin*

There is no rest for the weary at our Lab. Of course, we would not have it any other way! The 7th issue of the Newsletter features:

- Complex neurodevelopmental conditions (CoNDi) program
- International Society for Autism Research (INSAR) 19th Annual Meeting
- ASRC 26th Annual Walk for Autism
- Welcoming new staff and saying goodbye to fellows
- Puppets, and more!



## From the Director: A new research program announcement



Katarzyna Chawarska

It is our great pleasure to announce a new **interdisciplinary clinical research program** for investigating **Complex NeuroDevelopmental Conditions: the CoNDi Program**. The program supports state-of-the-art collaborative interdisciplinary research on early onset disorders, in service of improving lives of children and their families.

As our first initiative, we have launched a study focused on the **development of repetitive movements**, which are sometimes referred to as motor stereotypies. These typically consist of rhythmic, fixed movements that do not appear to serve a specific purpose, and may include flapping, posturing, waving, rotating, or tensing of body parts. Repetitive movements are frequently observed in autism, developmental delays, ADHD, anxiety, and other conditions; they have also been reported in children otherwise developing typically. For some, repetitive movements begin to manifest in infancy; for others, they emerge during the first years and tend to persist throughout childhood and adolescence. Their causes are not well understood. It is unclear whether the repetitive movements observed across various neurodevelopmental conditions share the same causes or follow the same developmental trajectories. Reports differ in terms of the situations when children's repetitive movements are most common or intense, their role, or their impact on children's everyday functioning. For example, some parents report that repetitive movements are associated with joy and excitement, while others indicate that are more common in response to stressful events. Sometimes intense or frequent repetitive movements may interfere with the child's ability to engage in other activities (e.g., play, daily routines). Evidence is also mixed regarding their impact on future developmental strengths and vulnerabilities, including social functioning, language, and cognition.

To address some of the gaps in research, we are currently recruiting study participants 4 years and younger who are exhibiting repetitive movements involving fingers, hands, head, or body, and who are either suspected of having autism or developmental delays, or who are developing typically. As part of their research participation, the children undergo comprehensive diagnostic evaluation, as well as assessment of repetitive movements and other behaviors, including attention and emotional and behavioral regulation. The study also involves collection of DNA samples using saliva to learn more about genetic factors that may predispose children to have repetitive movements.

**Interested in participating?**  
**Please contact Cat Bianco, [catherine.bianco@yale.edu](mailto:catherine.bianco@yale.edu)**

# INSAR 2023



The International Society for Autism Research (INSAR) Annual Meeting took place in Stockholm, Sweden. The SANA Lab was well represented and had many posters and an oral presentation to share the findings of our exciting research. These efforts would not be possible without the support and commitment of our wonderful families!



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.

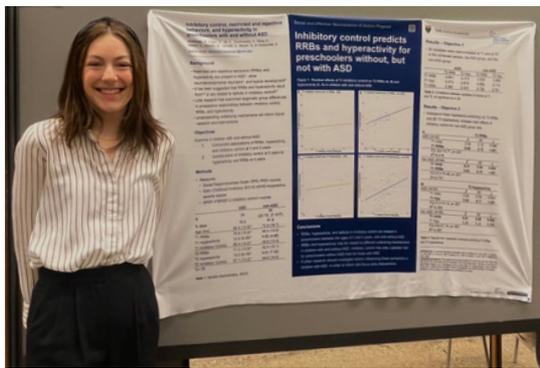
Professor Katarzyna ("Kasia") Chawarska was selected as an INSAR Fellow, one of the society's highest honors.

The program, which began in 2017, honors distinguished members of the society whose work has had a significant international impact on the scientific understanding of autism spectrum disorder, clinical practice, educational methods, and/or policy. The 2023 Fellows were announced at INSAR 2023 during the awards ceremony.

*Congratulations!*

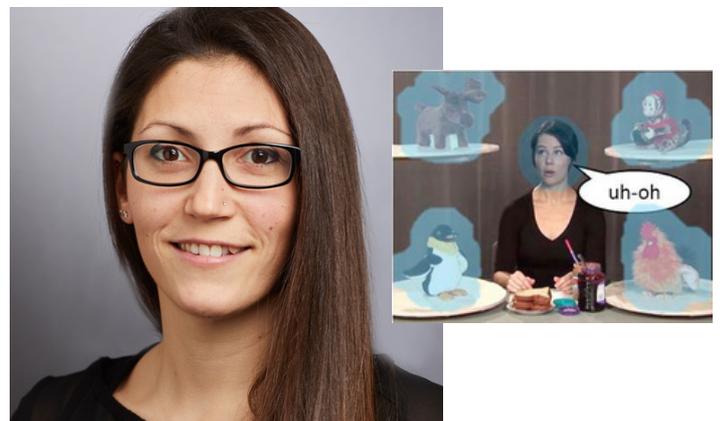
# SANA Lab INSAR Presentations

**Effortful control and emotional reactivity at age 2 predict age 3 internalizing and externalizing symptoms in toddlers with and without autism.** Macari, S., All, K., Donthireddy, V., Boxberger, A., Gordon, B., Bianco, C., Hong, E., Powell, K., Verneti, A., & Chawarska, K. (2023)

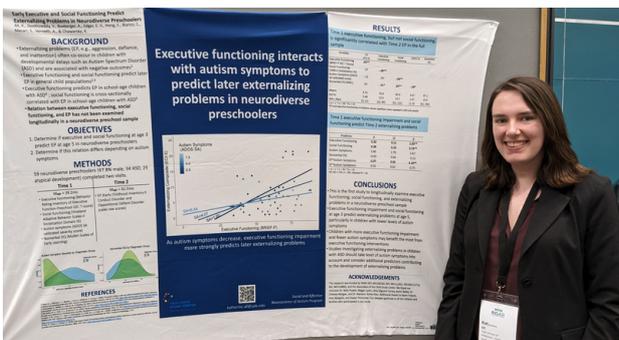


**Inhibitory control, restricted and repetitive behaviors, and hyperactivity in preschoolers with and without ASD.** Boxberger, A., Edgar, E. V., All, K., Donthireddy, V., Hong, E., Bianco, C., Gordon, B., Verneti, A., Macari, S., & Chawarska, K. (2023)

**Sustained joint attention in response to expected and unexpected referential gaze in toddlers and children with and without ASD: A longitudinal study.** Verneti, A., Donthireddy, V., All, K., Boxberger, A., Gordon, B., Bianco, C., Hong, E., Morgan, C., Shic, F., Macari, S., & Chawarska, K. (2023) - presented by Katherine All



Angelina Verneti



**Early executive and social functioning predict externalizing problems in neurodiverse preschoolers.** All, K., Donthireddy, V., Boxberger, A., Edgar, E. V., Hong, E., Bianco, C., Macari, S., Verneti, A., & Chawarska, K. (2023)

# SANA Lab INSAR Presentations

**fMRI functional connectivity patterns associated with language and social communication deficits in a cross-diagnostic developmental sample.**

Sanchez-Alonso, S., Cai, Y., & Aslin, R. (2023)



Sara Sanchez-Alonso

**Value learning in the social domain emerges at 6 months of age.**

Donthireddy, V., All, K., Edgar, E. V., Bianco, C., Hong, E., Boxberger, A., Gordon, B., Macari, S., Verneti, A., Wang, Q., & Chawarska, K. (2023)



Session Title: Using Eye Tracking for Early Assessments of ASD  
Oral presentation by Veda Donthireddy

## Recent Publications



**Concomitant medication use in children with autism spectrum disorder: Data from the autism biomarkers consortium for clinical trials.** Shurtz L, Schwartz C, DiStefano C, McPartland JC, Levin AR, Dawson G, Kleinhans NM, Faja S, Webb SJ, Shic F, Naples AJ, Seow H, Bernier RA, Chawarska K, Sugar CA, Dziura J, Senturk D, Santhosh M, Jeste SS. *Autism*. 2023 May; 2022 Sep 9. PMID: 36086805.

**Evaluation of clinical assessments of social abilities for use in autism clinical trials by the autism biomarkers consortium for clinical trials.** Faja S, Sabatos-DeVito M, Sridhar A, Kuhn JL, Nikolaeva JI, Sugar CA, Webb SJ, Bernier RA, Sikich L, Hellemann G, Senturk D, Naples AJ, Shic F, Levin AR, Seow HA, Dziura JD, Jeste SS, Chawarska K, Nelson CA 3rd, Dawson G, McPartland JC. *Autism Res*. 2023 Mar 16; 2023 Mar 16. PMID: 36929131.

**The autism biomarkers consortium for clinical trials: Initial evaluation of a battery of candidate EEG biomarkers.** Webb SJ, Naples AJ, Levin AR, Hellemann G, Borland H, Benton J, Carlos C, McAllister T, Santhosh M, Seow H, Atyabi A, Bernier R, Chawarska K, Dawson G, Dziura J, Faja S, Jeste S, Murias M, Nelson CA, Sabatos-DeVito M, Senturk D, Shic F, Sugar CA, McPartland JC. *Am J Psychiatry*. 2023 Jan 1; 2022 Aug 24. PMID: 36000217.

**A generalizable connectome-based marker of in-scan sustained attention in neurodiverse youth.** Horien C, Greene AS, Shen X, Fortes D, Brennan-Wydra E, Banarjee C, Foster R, Donthireddy V, Butler M, Powell K, Verneti A, Mandino F, O'Connor D, Lake EMR, McPartland JC, Volkmar FR, Chun M, Chawarska K, Rosenberg MD, Scheinost D, Constable RT. *Cereb Cortex*. 2022 Dec 27; 2022 Dec 27. PMID: 36573438.

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

**Functional connectome-based predictive modeling in autism.** Horien C, Floris DL, Greene AS, Noble S, Rolison M, Tejavibulya L, O'Connor D, McPartland JC, Scheinost D, Chawarska K, Lake EMR, Constable RT. *Biol Psychiatry*. 2022 Oct 15; 2022 Apr 25. PMID: 35690495.

**Hypoconnectivity between anterior insula and amygdala associates with future vulnerabilities in social development in a neurodiverse sample of neonates.** Scheinost D, Chang J, Lacadie C, Brennan-Wydra E, Foster R, Boxberger A, Macari S, Verneti A, Constable RT, Ment LR, Chawarska K. *Sci Rep*. 2022 Sep 28; 2022 Sep 28. PMID: 36171268.

**Functional connectivity for the language network in the developing brain: 30 weeks of gestation to 30 months of age.** Scheinost D, Chang J, Lacadie C, Brennan-Wydra E, Constable RT, Chawarska K, Ment LR. *Cereb Cortex*. 2022 Jul 21. PMID: 34875024.

# ASRC Walk 2023



## INCLUSIVE EMPLOYMENT SHOWCASE

**5.21.23**

**QUINNIPIAC UNIVERSITY-NORTH HAVEN, CT**

**CTWALKFORAUTISM.COM**

Once again, members of the SANA Lab attended the 26th Annual Walk for Autism, held by Autism Services and Resources Connecticut. As a Gold Plus 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. Click [here](#) to learn more about the resources provided by ASRC.



## Welcoming our new staff



Favorite children's book: The Year at Maple Hill Farm  
Favorite snack as a child: Spanish tortilla  
Favorite childhood toy: Gymnast barbie

### **Dr. Sara Sanchez-Alonso**

Sara joined the SANA Lab in January 2023 as an Associate Research Scientist. After obtaining a PhD in psycho- and neuro-linguistics from Yale in 2018, Sara completed a postdoctoral fellowship at Haskins Laboratories focused on pediatric neuroimaging and language acquisition in early development. Her research program examines neural and behavioral variation relevant to the development of language abilities in typically and atypically developing infants and toddlers. Sara's work combines multi-modal neuroimaging techniques, specifically functional magnetic resonance imaging (fMRI) and simultaneous functional near-infrared spectroscopy (fNIRS), to map developmental neuro-behavioral variation.

### **Julian Hinz**

Julian joined the SANA Lab as a postgraduate fellow in January 2023. He completed a M.A. in cognitive-affective neuroscience at the University Dresden, Germany in 2022. Julian began pursuing a PhD in autism research at Metropolitan University Oslo, Norway in collaboration with Yale's School of Medicine. His thesis is on attentional biases in preschoolers with ASD.

Favorite children's book: Letters from Felix  
Favorite snack as a child: Licorice  
Favorite childhood toy: Legos



## Welcoming our new staff - cont.

### **Monica Mleczek**

Monica joined the SANA Lab in January 2023 as an Administrative Assistant. She graduated in 2012 from New York University with a B.A. in Psychology. For the last ten years, Monica has been working at Yale Child Study Center's Vaccarino Lab.

Favorite children's book: Dr. Seuss  
Favorite snack as a child: Crackers and cheese  
Favorite childhood toy: Stuffed animals



### **Gitta Selva**

Gitta joined the SANA Lab as a Program Administrator in March 2023. Gitta completed her B.A. in Communications at New York University, after studying linguistics at Ludwig-Maximilian-University in Germany. She previously worked at the Gesell Program in Early Childhood at Yale, New Beginnings Family Academy, and Queensland University of Technology in Australia.

Favorite children's book: The Very Hungry Caterpillar  
Favorite snack as a child: Apples  
Favorite childhood toy: Lissie, the family dog



## Saying goodbye to our 2021-2023 fellows

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

### **Katherine All**

Kat will begin a doctoral program in Child Clinical Psychology at Penn State University this fall. She will be working under the mentorship of Dr. Cynthia Huang-Pollock investigating the cognitive mechanisms underlying ADHD. Kat is specifically interested in how emotion regulation and executive functions contribute to externalizing disorders such as ADHD.



### **Veda Donthireddy**

Veda is pursuing a career in life sciences consulting. She is excited to apply her scientific research skills that she developed at the Yale SANA Lab to industry where she will work on a range of scientific projects that aim to advance healthcare and improve patient outcomes.

### **Alexandra Boxberger**

Alex will begin a joint doctoral program in Clinical Psychology at the University of California, San Diego and San Diego State University in the fall. She will be working with Dr. Annika Linke in the Brain Development Imaging Lab, using neuroimaging techniques to study early differences in brain development and their connections with clinical outcomes, specifically focused on ASD.



# Puppets!

Cheryl Henson, President of the Jim Henson Foundation, was an invited guest speaker at Professor Fred Volkmar's weekly seminar "Autism and Related Disorders" on 4/18/23. Undergraduate students had the opportunity to participate in a puppet workshop with Lindsey "Z" Briggs.

Cheryl and Z presented stories from families and therapeutic centers showing that children are uniquely attracted to puppets. In fact, puppets can play a crucial role in facilitating social interaction in children with ASD.



Cheryl Henson



## Puppets! - cont.

The SANA lab is the first research group to explore how and when children's interest in puppets develops. We partnered with the Henson Foundation to create videos of a human and puppet speaking in child-friendly tones and presented these videos to babies at 4, 6, 8, and 12 months of age.

Research fellows Cat Bianco and Emily Hong presented results from this study, showing that babies are more attentive to the puppet speaker than the human speaker at 4, 6, 8, and 12 months of age. This work corroborates anecdotal evidence of children's interest in puppets and lays the foundation for implementation of puppets in therapeutic interventions with young infants. We are grateful for the support of families who visited in the lab multiple times to contribute to this groundbreaking research.



Development of selective attention to human and puppet faces.  
Bianco, C., & Hong, E. (2023, in progress)

# Kids Coloring Page



## Jump Up for Friendship!

Julia and her brother Samuel love playing dress-up with their new friend, Wes.  
Color the page, then stand up and join their jumping party—hop, hop, hop!



For more resources, go to [SesameStreetInCommunities.org](https://www.SesameStreetInCommunities.org)

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ACKNOWLEDGED BY THE YALE IRB 4/24/2023

Yale Child Study Center

Would you like to learn about your infant's emotional development?



Do you have an older child with an Autism Spectrum Disorder?

Come participate in a free and confidential research study investigating early emotional development and earn up to \$250!

For more information:  
(203) 764-5933 or visit:  
<https://bit.ly/SANABabyStudies>



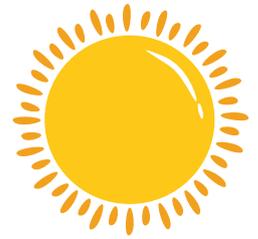
For more information:

HIC 2000031163

Yale Child Study Center, SANA (Social & Affective Neuroscience of Autism) Lab



# SUMMER EXPLORERS PROGRAM



**Southern Connecticut State University  
Recreation Therapy Program  
For children ages 6-8**



**This summer program is for children who may benefit from a structured program with a focus on cooperation and social skills.**



Each day will include a circle activity, physical activity, snack break, craft activity, physical activity, and a closing activity. (please see page 2 for outline of a typical week)

All activities will be held in the HHS 116 room and outside on the SCSU campus.

493 Fitch Street

Health and Human Services Building first floor  
Room 116

Drop off and pick up will be at HHS 116  
Parking is available adjacent to the building.  
Adults do not have to remain during the program hours.

**Facilitator:**

**Patricia Paugas MBA, CTRS**

Patricia comes with over 20 years of experience working with adults and children with disabilities.

**Students in the Recreation Therapy Program at SCSU will be assisting and supporting the program.**



**There are two sessions:  
You may choose one or both sessions to register and attend**

**Session 1:**

**9:00 am to 12 pm**

**Monday, Wednesday, Thursday, & Friday  
June 26, 28, 29, 30, July 5, 6, 7**

**\*We will be off on Monday July 3 and July 4, 2023**

**Session 2:**

**9:00 am to 12 pm**

**Monday, Wednesday, Thursday, & Friday  
July 10, 12, 13, 14, 17, 19, 20, 21**

**Each session is \$ 100.00.**

**To Register, if you have any questions, and to set up a time to stop by meet us, and see our space, please email:**

**Patricia Paugas [rosep1@southernct.edu](mailto:rosep1@southernct.edu)**

**For payment:**

Checks payable to

Institute for Adapted Sports and Recreation

ADDRESS: Southern Connecticut State University

493 Fitch Street

New Haven, CT 06515

ATTN: Recreation, Tourism, & Sports Management

FOR: Summer Explorers program



Eyetracking Experiments



## ***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](mailto:sanalab@yale.edu)

Interested in participating? Contact our program manager, Gitta Selva  
(203) 764-5933, [gitta.selva@yale.edu](mailto:gitta.selva@yale.edu)

***Save the date:  
Autism Forum  
Thursday, April 21, 2024  
Yale University, New Haven, CT***

## **Connect with Us**



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[medicine.yale.edu/lab/chawarska/](http://medicine.yale.edu/lab/chawarska/)

