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# NAIRR LAB

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## Letter from Dr. Nair

When I first joined Loma Linda University in 2020, the NAIIR lab had a slow start due to the COVID-19 pandemic. Since then, 2023 has been very exciting for our lab as we received several new grants, started multiple projects with collaborators, and are presenting our research at conferences around the world. We also finally completed the set up of our TRAC (Translational Research Across Childhood) Center, which provides a space for five different child and family labs to collaborate!

This would not have been possible without the efforts of our families who put in their time and effort to participating in our studies. As the year ends, I want to express gratitude to all of our families, collaborators, and team members who spent the year helping the NAIIR lab thrive. We're looking forward to what this upcoming year has in store for us.

From all of us here at the NAIIR lab, Happy Holidays and Happy New Year!

# RESEARCH

## NEW GRANT- SENSE STUDY

Dr. Aarti Nair is starting a new study, the Sensory Processing and Executive Functioning Neuropsychological Impact on Sleep Efficiency study (SENSE study), funded by Autism Speaks! The study aims to assess the presence of sleep and sensory disturbances in youth with autism spectrum disorder (ASD) ages 6 to 18. We hope to assess whether individual differences in sleep disturbances in ASD are meaningfully related to executive and psychiatric functioning scores and if sensory processing difficulties mediate these associations. The study is actively recruiting youth with ASD and typically developing peers!

## NEW GRANT- SIESTA STUDY

Drs. Tori Van Dyk, Cameron Neece, and Aarti Nair received a grant for their Study to Investigate the Effect of Sleep Treatment for families of children with Autism Study! SIESTA is a research project that was started to compare two brief interventions aimed at improving child health and behavior outcomes of youth with autism. We are also interested in learning how parenting stress and child behavior are related to child health and sleep both before and after the intervention, in youth with ASD ages 3 to 10. What we learn from this study will help us improve interventions for future families like yours and make the knowledge locally accessible.

## PUBLICATION

One of our students recently published a paper on child sleep, behavior, and parenting distress in families of children with ASD! Congratulations, Brooke!

Iwamoto, B. K., Neece, C. L., Nair, A., Rockwood, N. J., Fenning, R. M., Krantz, M. L., & Van Dyk, T. R. (2023). Exploring bidirectional relationships: Child sleep duration, child behavior problems, and parenting stress in families of children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 106, 102197. <https://doi.org/10.1016/j.rasd.2023.102197>

## MEMBER SPOTLIGHT

### Hector Lab Manager

We want to highlight our Lab Manager, Hector! Hector oversees everything our lab does, from recruiting our families for our studies to leading our weekly meetings. Thank you for everything you do for us!



Fun Fact:  
Hector has a cat named Miso!

New Addition to  
our team- our  
brain model!





# GREETINGS FROM....



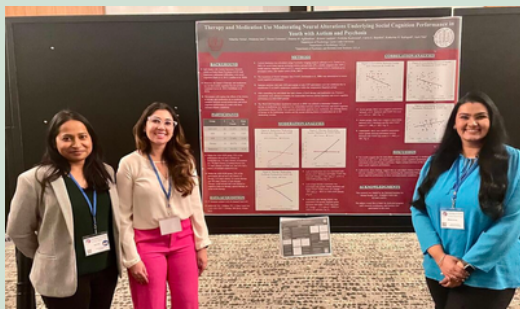
## STOCKHOLM

Our students were awarded travel grants by the Psychology Department to present their research at the 2023 Annual Society for Autism Research (INSAR) Conference in Stockholm, Sweden. Mithila presented on how mixed connectivity of the medial prefrontal cortex brain region was associated with poorer social cognition in Autism Spectrum Disorder (ASD), while reduced connectivity was associated with better social cognition in Early-Onset Psychosis (EoP), compared to typically developing (TD) groups. Rhideeta presented on how youth with ASD and EOP exhibited mixed patterns of brain connectivity of the fusiform face area, of which overconnectivity was associated with greater difficulty in recognizing facial emotions in both ASD and EOP, compared to TD youth. Katie presented on the positive association between sensory processing difficulties, especially heightened sensitivity with textures, and sleep problems in children with ASD.



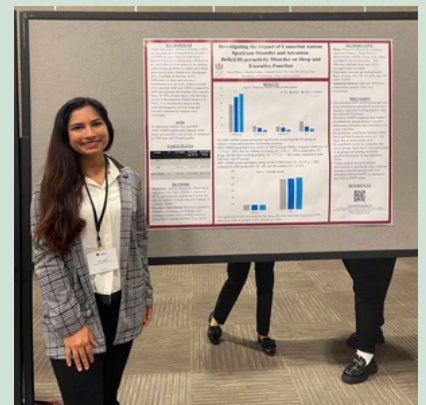
## SAN DIEGO

Members from our team presented their research at the 2023 International Neuropsychological Society Conference in San Diego! Niharika presented on how history of any medication use and therapy were found to improve the architecture of social brain regions and relatedly social cognition in both youth with ASD and EoP. Deanna presented on how childhood trauma exposure was found to reduce cortical thickness in social brain regions thus further impacting social cognition in adolescents with EoP.



## RIVERSIDE

The 2023 Western Psychological Society Conference was hosted by the LLU School of Behavioral Health in Riverside! Sanya presented on how individuals with comorbid ASD and attention-deficit/hyperactivity disorder (ADHD) were found to have more sleep disturbances and deficits in executive function, especially working memory, than those with only ASD and TD groups.



## TORONTO

Rhideeta was awarded an educational stipend to present her research at the 2023 International Society for Magnetic Resonance in Medicine in Toronto, Canada! Rhideeta presented on how a higher concentration of an inhibitory neurometabolite, gamma-aminobutyric acid (GABA), in a social brain hub, the anterior cingulate cortex, was found to be negatively associated with the ability to differentiate facial emotions, such that youth with ASD showed greater difficulties compared to youth with EOP and TD groups.

