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Children's Hospital Boston

## Hello from Dr. Nelson

Hello from the Labs of Cognitive Neuroscience! I hope that everyone has been staying warm in this snowiest of winters. Many of you have braved the frigid weather to participate in studies recently, a feat that we very much appreciate! Thankfully, it seems as though spring is just around the corner! New studies are getting under way as always here at the LCN, including two longitudinal projects: one looking at [how infants perceive race](#) and another for three to seven year olds that aims to identify early neural markers of ADHD. As always, please feel free to explore our [website](#) or contact our research team for more information about studies that you or your child might participate in.



Whether you have already taken part in our studies or have recently joined our growing Participant Registry, I greatly appreciate your interest in our research. Your support of our work and participation in our studies are invaluable to us in answering many important questions related to infant and child cognitive development.

Warm Wishes,

Charles A. Nelson, Ph.D.

**Director of Research, Division of Developmental Medicine**  
**Richard David Scott Chair in Pediatric Developmental Medicine Research**  
**Professor of Pediatrics and Neuroscience, Harvard Medical School**

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## In the News: The Infant Sibling Project

Recently, the journal *BMC Medicine* published a new LCN study that was carried out with the collaboration of William Bosl, Ph.D. Dr. Bosl was able to use data from our [Infant Sibling Project](#)—a study that seeks to identify risk markers for autism and communication disorders in the first year of life—to determine with 80% accuracy whether or not an infant was at high risk for developing an autism spectrum disorder. While this research is still new and requires further study, we hope that it marks a first step toward a reliable means of identifying autism before a child's first birthday. This would allow for much earlier intervention than is currently possible, leading to better outcomes for children and their families. A warm thank you to the many families who have volunteered their time for this and other LCN studies—your participation makes progress possible. Click on the links below to see highlights from the media coverage.

["Brain Scans May Someday Detect Autism"](#) from [cnn.com](#)

["Brain Waves Detect Babies' Potential Risk of Autism"](#) from [Good Morning America](#) and [abc.com](#)

["Brain Wave Study May Lead to Early Autism Diagnosis"](#) from [WCVB TV, Channel 5](#)

### **\*The Infant Sibling Project is Now Enrolling Families\***

Currently, we are looking for **infants (age 12 months or younger) who have an older sibling with a language impairment or an autism spectrum disorder**. If you would like to learn more about how you and your family might participate, please contact Rebecca Hansen at [rebecca.hansen@childrens.harvard.edu](mailto:rebecca.hansen@childrens.harvard.edu) or 857-218-3011. And if you know someone who you think may be interested, please feel free to forward this newsletter along so that they have the opportunity to learn more as well!

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## Calling all Teens: Adolescent Stress & Coping Skills

We are currently looking for 13-17 year olds to participate in our study on adolescent stress and coping. If your child would be interested or you know someone who might be, please feel free to forward this newsletter along so that they can find out more!

The study seeks to examine questions such as: **What parts of an adolescent's experience influence his or her emotional response? Could difficult and stressful experiences be part of what affects an individual's emotional development? And could stress reactivity predict differences in emotional sensitivity?**



You can click [here](#) to read the full description on our website, or contact Margaret Sheridan for more information at [margaret.sheridan@childrens.harvard.edu](mailto:margaret.sheridan@childrens.harvard.edu) or 857-218-5210.

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## Do You Have a New Addition?



In the past year, we have had the pleasure of welcoming several new babies to our LCN staff family, including multiple sets of twins and the little book lover pictured here, born in November to our Recruitment Coordinator, Rebecca Hansen. If you also have a new bundle of joy at home and would like to hear about the many infant studies we have going on this year, please contact Rebecca to let us know about your newest family member. That way, we can be sure to keep you informed about any studies that might be of interest! You can reach Rebecca at 857-218-3011 or [rebecca.hansen@childrens.harvard.edu](mailto:rebecca.hansen@childrens.harvard.edu)

To learn more about current infant studies, click [here](#).

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## Boston Children's Museum

In addition to study participation opportunities here in the lab, you can also visit us at Boston Children's Museum on Saturday afternoons from 12:00-2:00! Research Assistants from Dr. Margaret Sheridan's lab will be there with some fun memory studies for children ages 4 and up. Look for them at the end of the main hallway on the third floor.

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## Featured Study: Emotional Faces & Developmental Changes in attention

In this study, we are interested in how babies learn to recognize facial expressions of emotion, an ability that develops very early in life. To learn more about how the ability to process facial emotions develops in different areas of the brain, we will measure babies' brain activity and eye movements while they look at pictures of different facial expressions. We are particularly interested in how brain activity in response to emotional expressions changes between 5 and 7 months, so we will be seeing babies at both of those age points.

Previous studies have shown that, between 5 and 7 months of age, developmental changes take place in babies' ability to recognize and respond to facial expressions of emotion. At 7 months, babies prefer to look at faces that express emotions, such as fear, whereas 5 month olds do not yet show this preference. The purpose of the current study is to investigate where and how this developmental shift occurs in the brain. We hypothesize that during this period of development certain areas of the brain reach functional

maturation, specifically a network that includes emotion-related neural systems like the amygdala, as well as visual and attention-related systems. As a result, by 7 months babies begin to show this preference for faces that show an expression of emotion.

The ability to perceive and identify emotions in faces is crucial to maintaining successful social interactions. By learning more about how these brain systems develop, we aim to gain insight into typical patterns of emotional and social development. In gaining a better understanding of these typical patterns we also hope to shed light on how and why these patterns often differ in individuals with certain disorders, including anxiety and autism spectrum disorders. We also hope that our work will be useful for future studies examining individual differences in emotion processing

**If you have a soon-to-be 5 or 7 month old at home and are interested in learning more or participating with your child, please contact Sonya Troller-Renfree at [sonya.troller-renfree@childrens.harvard.edu](mailto:sonya.troller-renfree@childrens.harvard.edu) or 857-218-4779.**

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