



Children's Hospital Boston

## *Laboratories of Cognitive Neuroscience Summer 2009 Newsletter*

### **Hello from Dr. Nelson**

Hello from the Labs of Cognitive Neuroscience! I hope you are all enjoying the summer months, especially now that the sun has decided to shine! Here in the labs we are busy as always, with new studies for all ages.

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 is 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**



### **In the News**

**"Arresting Autism: A sibling study finds clues about the complex condition."**

*Dream Magazine*, Summer 2009.

Click [here](#) to read this article about the lab's Infant Sibling Project, which aims to find reliable markers to diagnose autism before a child's first birthday. For more details on the study on our website, click [here](#).

**"Autism Genes"**

*NOVA Science NOW*, July 7, 2009.

Click [here](#) to watch this segment about how Dr. Nelson and other area researchers are learning more about the genetic components of autism. You can also click on the "[Ask the Expert](#)" link to see Dr. Nelson's responses to viewer questions.

## In the Community

### **West End Children's Festival, Saturday, August 15th, 12-4**

Come join us for some afternoon fun in the West End! We will have our big brain puzzle and some fun brainy games, so please stop by and say hello! For more information on the festival and its history, please click [here](#).

### **Watertown Faire on the Square, Saturday, September 27th, 10-4**

Head to Watertown's Saltonstall Park for a great day of family fun! There will be live music, plenty of games, and lots of fun things to eat. Eliza and Tara from our lab will also be there with our table full of brainy fun, so stop by to see them if you're out and about!

For more information on the fair, click [here](#).

### **Autism Speaks, Walk Now for Autism, Sunday, October 18th**

This year the labs will again participate in the Resource Fair at the Greater Boston Walk Now for Autism at Suffolk Downs. Last year we had a wonderful time talking with families interested in our autism research program, and we look forward to connecting with families again this year. For more information on the walk and how your family and friends can get involved, click [here](#).



## Featured Study: The Other Gender Effect

When infants are born they have a very wide perceptual window through which they are able to process all different kinds of stimuli. As they grow and develop, their brains begin to tune in to those objects in the world that are most functionally significant. In other words, they become better at processing the kinds of objects, such as faces, that are most common in their environment. This process is known as *perceptual narrowing*. Over the course of the first year, infants quickly develop a specific set of brain networks to help them interpret faces, which are a special class of object and carry important social cues like identity and emotion. As part of this process, infants are already beginning to “specialize” in the kinds of faces they see most often. In fact, previous research has demonstrated that adults are “face experts” who are most adept at recognizing and remembering faces of their own race, gender, age, and species.

In the current study, we will work with **7 month old infants** to examine their discrimination of male and of female faces while taking into consideration the infants' experiential history with faces of different sexes. We specifically aim to recruit participants who have varying degrees of experience with male and female caretakers. An in-depth questionnaire, administered at the beginning of the session, will help us to establish an approximate male to female “care giving ratio” for each child.

Using our Tobii Eye Tracking system, we will be able to track each participant's eye

movements as they are presented with photographs of male and female faces in a simple discrimination task. In a separate task, we will record the infant's brain activity (or EEG) as he or she looks at a series of male and female faces. In this part of the session, repeated stimuli will help us to determine how differential experience with either males or females can affect an infant's ability to recognize and remember the two different categories of faces.

The results of this study will not only further our understanding of the typical development of facial recognition strategies, but will also provide an important baseline against which we can measure the behavior and looking patterns of children who show differences in facial recognition, such as children diagnosed with Autism Spectrum Disorders.

If you are interested in participating with your child, please e-mail Eliza Congdon ([eliza.congdon@childrens.harvard.edu](mailto:eliza.congdon@childrens.harvard.edu)) or call the lab at 617-355-0400.

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