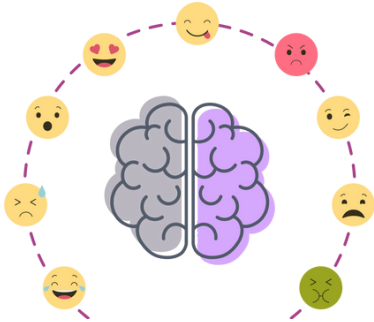


EMOTION PROJECT NEWSLETTER



BOSTON CHILDREN'S HOSPITAL

OCTOBER 2022



A LETTER FROM OUR PRINCIPAL INVESTIGATOR

Dear Emotion Project Parents,



Happy Fall! I hope you and your family had a relaxing summer and a smooth transition into the new school year. On behalf of the Emotion Project, I wanted to reach out about some new, exciting announcements!

First and foremost, our team, Dr. Nelson, and I would like to extend our thank you to our wonderful parents. Whether it is coordinating transportation to our lab, setting up the Zoom call for virtual visits, or completing long surveys, we are so thankful for your participation. It is families such as yours that make our work possible, and we are so grateful.

Your continued participation in our study has impressed not only us, but also the National Institute of Mental Health. Thus, it is with great pleasure that I announce we have received funding to continue the Emotion Project for an additional 5 years!

Thank you so much for making our project such a special journey. We are so excited to see you all return to our lab soon!

Michelle Bosquet Enlow

Dr. Michelle Bosquet Enlow
Principle Investigator, Emotion Project

WHATS INSIDE:

- Study Updates
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5 WE ARE EXTENDING OUR STUDY FOR AN ADDITIONAL MORE YEARS!

What does this mean for you & your family?

You may have come into our lab with your child to participate in our study when they were a baby, 3 years old, 5 years old, and/or 7 years old. We recognize that the COVID-19 pandemic has been difficult for everyone and may have hindered participation during the last 2 years. One of the goals of our new study is to understand how the pandemic has been affecting kids, so we hope families can participate in this next round. No matter how many times your child has participated to date, we now are hoping to see you and your child when they are 11 and 13 years old!

The new study activities will focus on how differences in emotional, physiological, and behavioral processing from infancy through early adolescence are associated with emotional and behavioral challenges, particularly anxiety. We also want to learn more about how COVID-19 pandemic-related experiences have been influencing young adolescents' mental health. This information will help us develop new methods for identifying and treating children and adolescents who may be at risk for developing anxiety. We expect this information will also tell us what resources help protect children in difficult times.



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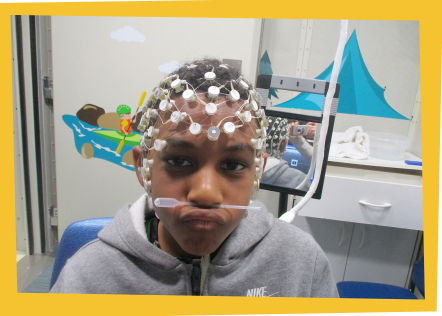
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PARTICIPATION IN THE 11 & 13 YR VISITS INCLUDE...

An in-person visit to complete the neuroimaging and physiology portions

A set of questionnaires for you and your child to fill out

If you are no longer living in the area, we would still love to have you participate! Please email or call us to learn of options for remote participation.



NEW LAB ACTIVITIES

For some families, we are introducing a new neuroimaging technique! Until now, half of our participants were assigned to the fNIRS group ("functional near-infrared spectroscopy"), and the other half to the EEG group ("electroencephalography"). Both are neuroimaging techniques that measure brain activation, with fNIRS measuring blood flow changes and EEG measuring electrical activity within the brain. For the new visits, we will merge the groups into an EEG-only study!



This means that if your child wore the fNIRS cap in prior visits, they will now be switching to the EEG net (like the one in the above picture!). If your child wore the EEG net in prior visits, they will continue to do so. The EEG net has soft, damp sponges that touch the surface of your child's head. It is safe and very quick to apply. Each sponge is an electrode that detects and records the electrical activity of thousands of neurons signaling.

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OUR NEW LAB

In the Spring of 2021, we relocated to 2 Brookline Place in Brookline, MA. Some of you may have already visited us at our new lab for the 7-year follow up visit. The building is a newly renovated laboratory and we are so excited for you to see our new space!



TEXTING IS NOW
AVAILABLE FOR
COMMUNICATION
WITH OUR
PARTICIPANTS!

If you receive an email that looks like the one below, it is from us and safe to open! Per updated hospital guidelines, all email communication between our project and participants must take place through this secure portal unless you give permission to receive non-encrypted emails. **We are now able to send you regular, non-encrypted emails with your consent!** Contact us if you would like to receive study communication via non-encrypted emails.

Update Your Contact Information!

If you or your family have any new contact information changes (email address, home address, phone number), **scan the QR code** below so we can continue to reach you! The QR code will send us a *non-encrypted* email with your updated information.



Emotion Project Participation! [inbox x](#)

 emotion.project <emotion.project@childrens.harvard.edu>
to me -

 Boston Children's Hospital
where the world comes for answers

You have received a secure message from Boston Children's Hospital. Please open the attachment "SecureMessageAtt.html" in this email.

Please note: if you have trouble opening the message, please try the following:

1. In your web browser, delete the temporary internet files and cookies.
2. Close the web browser.
3. Open the SecureMessageAtt.html file in your secure email message.

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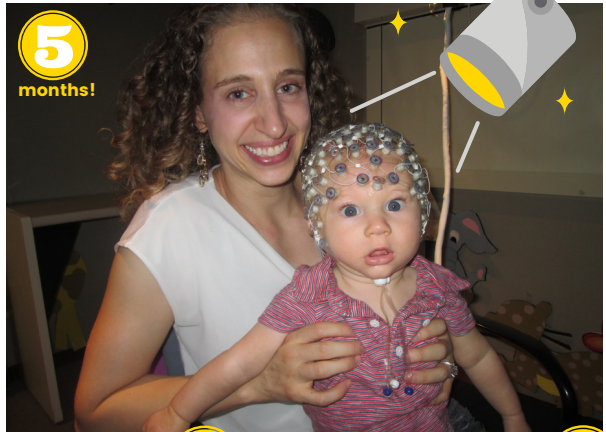
CLINICAL NEUROPHYSIOLOGY CORE

We are excited to be collaborating with Dr. April Levin, the Co-Director of the Clinical Neurophysiology Core (CNC). Dr. Levin and her CNC team specialize in EEG technology and will be helping out with our study sessions. Dr. Levin and her team are so excited to meet the wonderful families in our study!

FUN FACT!

April has been involved in the Emotion Project for the past 7 years. Her son, Caleb, is a participant in our study and loves helping his mom at work!

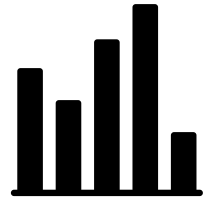
Whether your family participated in all of our study visits or only at infancy, we are so grateful for everything you have contributed to the Emotion Project. You have helped us learn so much about the development of emotions and mental health in children. We would love to get feedback on your experience in the study thus far and hear what you are curious about when it comes to child development. Feel free to give us a call at 857-218-3660 or email us at emotion.project@childrens.harvard.edu with any feedback you would like to share!





STUDY FINDINGS

- ★ EEG responses to emotional faces in infancy and early childhood gives us information about which children are more likely to develop anxiety challenges later on.
- ★ EEG data from the first 5 years of life can distinguish among children with anxiety challenges, children with ADHD or oppositional behaviors, and children without these challenges.
- ★ Neural responses to emotional faces in the dorsolateral prefrontal cortex in infants measured using fNIRS is predictive of anxiety diagnoses in later childhood.
- ★ Early life experiences appear to influence brain circuitry associated with emotion processing.
- ★ We were able to identify three temperament groups that were relatively stable in early childhood: (1) well-regulated; (2) irritable; and (3) inhibited/negative reactive. Temperament group was related to the likelihood of having later anxiety difficulties.
- ★ Higher autonomic nervous system reactivity (heart rate, respiration) while watching a fearful video at age 3 years was associated with more child internalizing (e.g., anxiety) but not externalizing (e.g., aggression) symptoms at age 5 years.



IMPLICATIONS

Taking a developmental perspective when researching mechanisms involved in emotions and emotional challenges is critical. Further studying these processes into adolescence is essential!

Using neuroimaging technology such as EEG and fNIRS may have major implications for clinical intervention and prevention strategies. For example, they may allow for more precise diagnostic measures, very early prediction of mental health risk prior to symptom onset, and identification of vulnerability and protective factors across neural, behavioral, and environmental domains that can be targeted in preventive interventions.

MEET THE TEAM!



● **Michelle Bosquet Enlow (she/her)** ●
Principal Investigator
Hometown: Easton, MA
Favorite Podcast: We Can Do Hard Things



● **Charles Nelson (he/him)** ●
Co-Investigator
Hometown: Long Island, NY
Favorite Podcast: Serial



● **April Levin (she/her)** ●
Co-Investigator
Hometown: Newton, MA
Favorite Podcast: The Radio



● **Maggie Modico (she/her)** ●
Project Coordinator
Hometown: Rockville Centre, NY
Favorite Podcast: Crime Junkie



● **Ada Kamenetskiy (she/her)** ●
Research Assistant
Hometown: Avon, CT
Favorite Podcast: Stuff You Should Know



● **Robert Law (he/him)** ●
Research Assistant
Hometown: Lost Altos, CA
Favorite Podcast: TryPods



● **Caroline Kelsey (she/her)** ●
Postdoctoral Research Fellow
Hometown: Greenwich, CT
Favorite Podcast: Hardcore History



● **Akshar Patel (/)** ●
Research Data Manager
Hometown: Burlington, NJ
Favorite Podcast: Radiolab

