

# ISLAND LAB

## Newsletter



Dear Readers,

We are excited to release our fifth edition of our annual newsletter where we share updates, accomplishments, and fun team moments from this past year.

We are grateful for our families that make our research possible and appreciate the time and effort you have given us these past few years. Keep reading to learn more about exciting updates regarding our COPE and ORCA projects.

### In This Edition

- 01 A Letter to Our Readers
- 02 Diversity, Equity and Inclusion Statement
- 03 Meet The Lab
- 04 Snapshots of Our Year
- 05-08 Lab Member Spotlights
- 09 COPE Study Updates
- 10-11 ORCA Study Updates
- 12 Visual Attention Article
- 13 Thank you!

# STATEMENT OF DIVERSITY, INCLUSIVITY, EQUITY, ANTI-RACISM, AND ACTIVISM

At the ISLAND Lab, we are committed to **fostering an inclusive and supportive environment** regardless of race, ethnicity, socio-economic background, sexual orientation, or gender identity. We take our roles seriously as students and researchers who are committed to promoting an **anti-racist agenda** within academia and our daily lives.

Every semester we have lab-wide group discussions on anti-racism and addressing our own internal biases, especially in the context of conducting research. We acknowledge these discussions must be ongoing and frequent in order to achieve change.

Below are discussion topics from Fall 2023 and Spring 2024.

Fall 2023

## Researcher Positionality - A Consideration of Its Influence and Place in Qualitative Research - A New Researcher Guide

Andrew Gary Darwin Holmes

School of Education, University of Hull, Hull, England

<https://orcid.org/0000-0002-5147-0761>

Positionality statements recognize that everyone is shaped by their personal experiences, which can impact how we interpret, analyze, and communicate research. We recognize the importance of reflecting on our own social identities and developing our own positionality statements in both qualitative and quantitative work.

Our team reviewed the five principles for applying Quantitative Critical Race Theory (QuantCrit) to our own approach to research. We discussed how race is a social construct and how researchers often place value in defining and deciding which categories participants belong to. Additionally, most scientific literature is often too difficult for the general public to interpret. One of our priorities is to make our findings and studies accessible for anyone to understand.

Spring 2024



EdWorkingPaper No. 22-546

How to "QuantCrit:" Practices and Questions for Education Data Researchers and Users

Wendy Castillo  
Princeton University

David Gillborn  
University of Birmingham

# Meet Our TEAM



Natalie Brito, PhD  
Principal Investigator



Denise Werchan, PhD  
Postdoctoral Fellow



Annie Brandes-Aitken, PhD  
Postdoctoral Fellow



Gianina Peréz  
Graduate Student



Lisette Giménez  
Graduate Student



Maggie Zhang  
Graduate Student



Sasha Andrews  
Lab Manager



Alejandra Lemus  
Research Associate



Amy Hume  
Research Associate



Cindy Huitzil  
Research Associate



Michelle Masiello  
Research Associate

# SNAPSHOTS OF OUR YEAR



# LAB MEMBER

# SPOTLIGHTS ✨



“I am very excited to continue my time here at ISLAND lab. I have loved learning about and contributing to the different studies that our lab runs, while also getting to share my enthusiasm for the work that we do with our research assistants. It is inspiring to see the passion that students have when learning about our lab’s current projects! I am an aspiring Child and Adolescent Psychologist and am looking forward to further developing my research skills and knowledge in neuropsychology in this role!”

-Sasha Andrews, ISLAND Lab Manager

“I am excited to continue my time at ISLAND as an incoming doctoral student for Fall 2024. It’s been an absolute honor and privilege to be the lab manager of ISLAND for the past four years. This lab is where I discovered my passion for conducting research and mentoring students, and I couldn’t be more grateful for the experiences and opportunities I’ve had because of this lab. I could not be here without Dr. Natalie Brito and her support over the years. I look forward to continuing my contributions to the lab as a graduate student!”

-Maggie Zhang, Doctoral Student



# BRONX SCIENCE

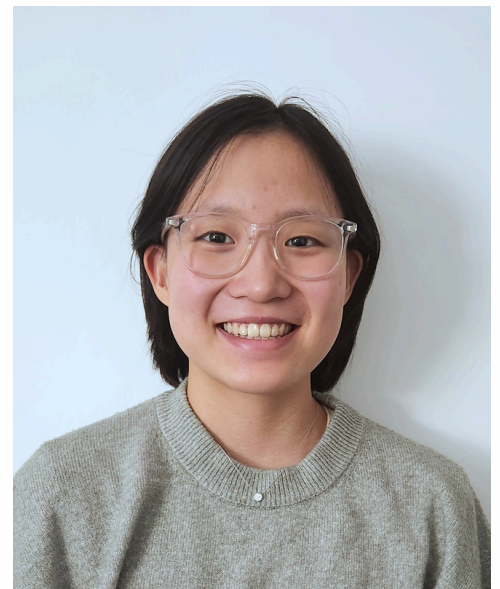
# RESEARCH PROGRAM

*This summer, we were excited to welcome high school students Aissata Diallo and Anna Hsu who are enrolled in their Biology Research Program where they work towards completing an independent research project and scientific paper.*

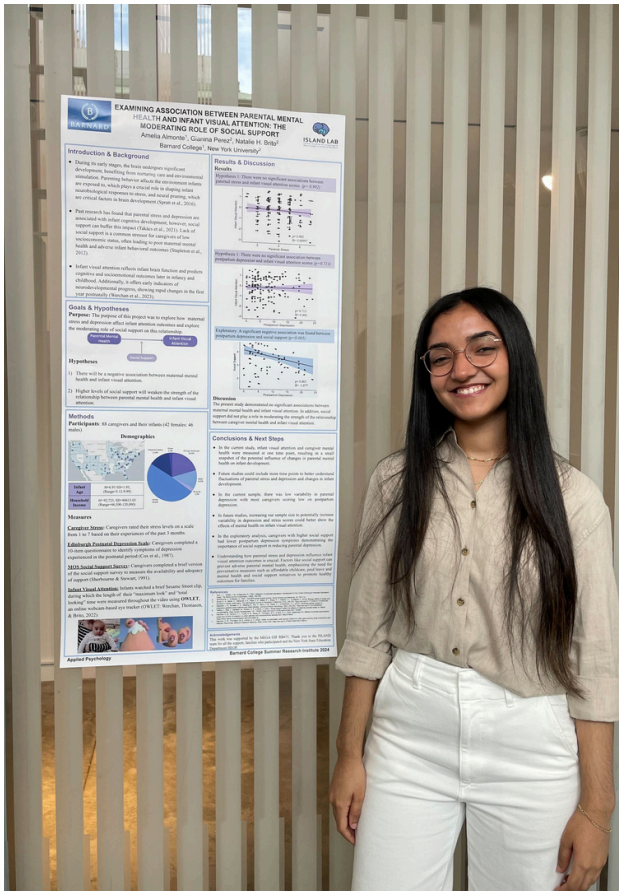


Aissata is a rising senior at the Bronx High School of Science. Growing up in an immigrant household, she has always been surrounded by people who are bilingual and who allowed her to experience different cultural practices. Aissata is interested in the cognitive development of children who grow up in bilingual vs. monolingual households and how this duality plays a role in their development. She is excited to join the ISLAND lab and gain more knowledge on this topic!

Anna is a rising junior at the Bronx High School of Science with a passion for neuroscience and psychology. She is interested in how environmental factors such as stress and adversity influence neurocognitive development and how they can be mitigated to promote growth and learning. Anna also hopes to explore how culture and language affect mental health. She is very excited to be a part of ISLAND lab as she broadens her knowledge of developmental psychology and research!

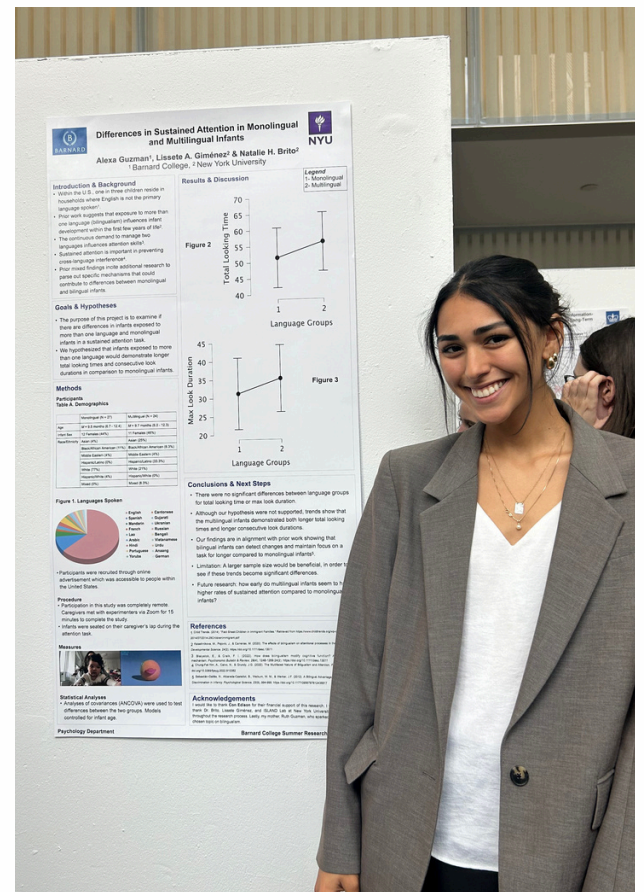


# SUMMER RESEARCH INSTITUTE BARNARD STUDENTS



Amelia Almonte is a third year undergraduate student pursuing a B.S. in Neuroscience at Barnard College. She is interested in understanding how factors such as bilingualism and socioeconomic status play a role in early brain and behavioral development. She believes that these fundamental aspects play a crucial role in creating nurturing environments that support healthy growth and development. As an aspiring medical student, she is constantly seeking opportunities to enhance her knowledge and research skills.

Alexa Guzman is a third year undergraduate student pursuing a B.S in Psychology and a minor in Spanish and Latin American Studies at Barnard College. She is interested in understanding psychology's greatest question of nature versus nurture and how different home environments impact childhood development in the first few years of life. She believes that mental health should be accessible to all, and resources should be easily available to families from diverse backgrounds!



POST-DOCTORAL FELLOW

SPOTLIGHT



Dr. Annie Aitken was awarded the Society for Research in Child Development (SRCD) Small Grant for Early Career Scholars! Her project, **Postpartum Ecological Assessment of Cognitive Health (PEACH) Study**, will examine how longitudinal trajectories of maternal mental health relate to infant outcomes.

Annie's most recent paper, "Maternal Heart Rate Variability at 3-Months Postpartum is Associated with Maternal Mental Health and Infant Neurophysiology" was just published in *Scientific Reports*. Congratulations!!





# COPE Study

Covid-19 and Perinatal Experiences

The aim of the COVID-19 and Perinatal Experiences (COPE) study is to understand the experiences of stress and resilience during the pandemic and potential impacts on infant development. We are currently following families across multiple stages of their baby's life, collecting survey data, behavioral observations, neuroimaging and biospecimens.



## 6 Month Study

We had **191 families** participate in the 6 month study. These families were invited to complete online **surveys**, a **mother baby Zoom visit**, and **remote biospecimen sample collection** for both mom and baby.



## 12 Month Study

We had **164 families** participate in the 12 month study. Of those families, **123 families** also completed a previous study with us. These families completed tasks similar to the 6 month study.

## In-Person Behavioral Visits



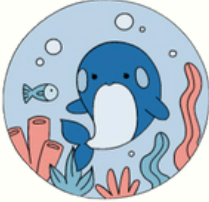
## 30 Month Study

We have completed a total of **78 visits**, 49 of which have been completed in person. Families are invited for a **lab visit** to complete activities together. While playing, mothers and their children both wear "sensor" hats that use light to measure brain activity (**fNIRs**) and heart rate monitors. They also provide **biospecimen samples**.



## 42 Month Study

We had **79 families** participate in the 42 month study. Families complete similar activities as they would at 30 months, but this time **in their home environment**. We are also collecting brain activity (**fNIRs**) and **heart rate** data as well.



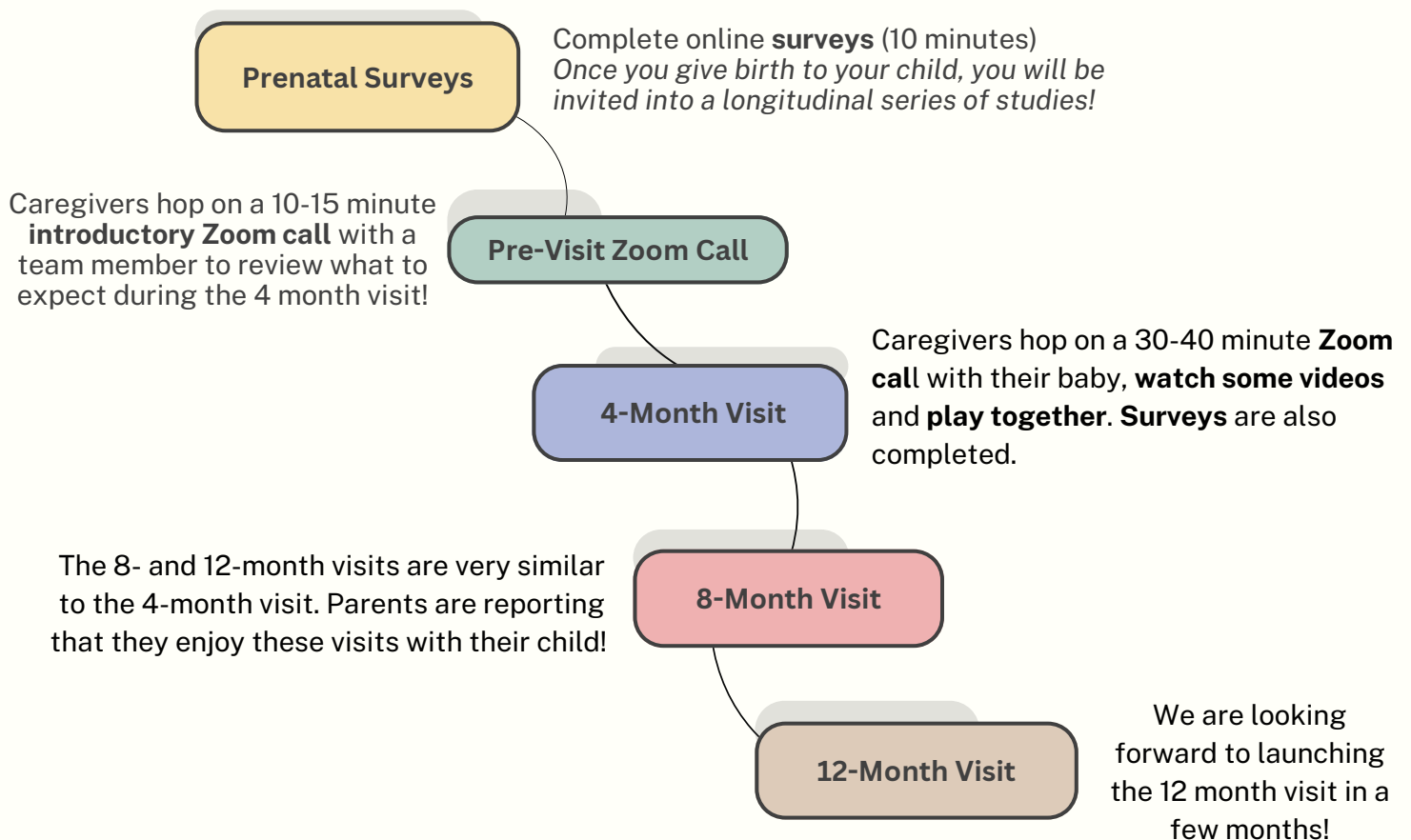
# ORCA


Online Remote Child Assessment

# Project



The aim of the Online Remote Child Assessment (ORCA) study is to **make participation in research studies more accessible** in order to better understand how diverse early experiences impact child development. Families are mailed study materials that include **non-invasive heart rate devices (shown in the picture above)** that caregivers and their infants wear during the visit while watching videos and playing together. Our study follows these families across the first year of life (see diagram below for some more details).





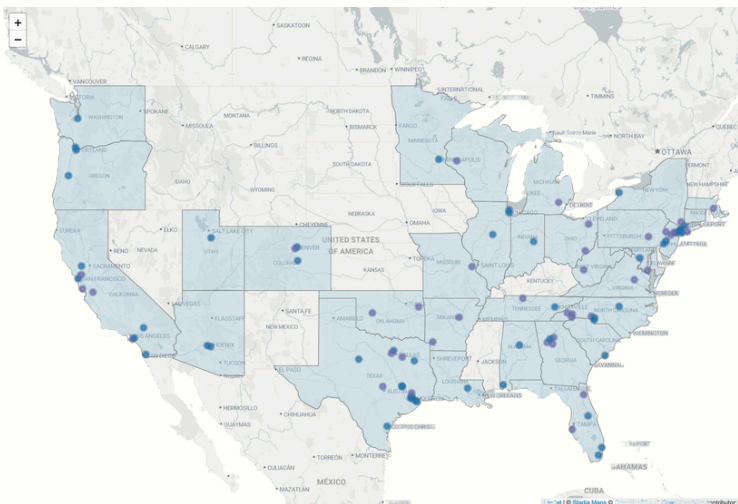
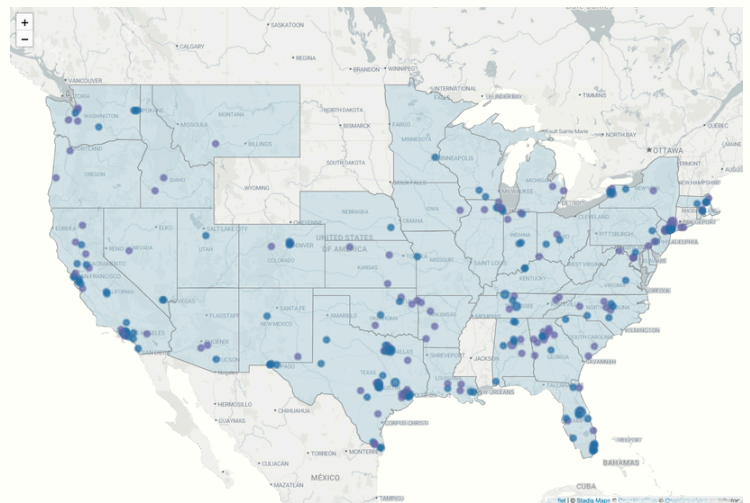
# ORCA

Online Remote Child Assessment

# Project

Our study is particularly interested making it easier for families across the United States to participate in research. The maps below represent where our families are located.

We currently have **over 250 families** who have completed prenatal surveys from **40 states** across the United States.



After families give birth, they are invited into our longitudinal study series. We currently have **over 90 families** who **have completed the 4 month study.**

# VISUAL ATTENTION

What does baby's attention tell us?

How do we investigate it?



**Babies' eye movement is the window to their cognitive development!**

By looking at the direction and duration of their gaze, we can attempt to investigate their internal thought process ✨

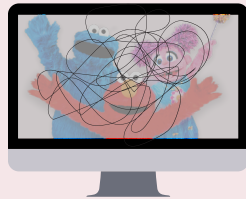
Visual cues shed light on babies' **higher-order cognitive skills**, such as executive functioning and language development

We use an algorithm called

**Online Webcam-Lined Eye Tracker (OWLET)**



Remote visit at home



Effortless & accurate results

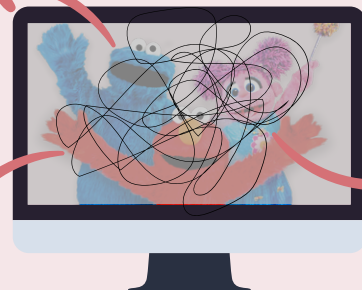
OWLET is able to process infant attention data accurately and automatically 😊

OWLET processes babies' eye movements and includes the following metrics ...

**Location**

**Duration**

**Speed**



These different aspects of babies' eye movements provide insights into early attention.

It's also important to know that many other factors, such as babies' temperament, play a big role in their visual attention !

Likewise, there are also many ways for parents to promote babies' attention!



**Interactive activities**



**Social Interaction**



**Thank you so much for  
reading our annual  
newsletter!**

**We look forward to  
sharing more updates  
and future publications  
with you!**

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