



HARVARD UNIVERSITY  
**DAVID ROCKEFELLER CENTER  
FOR LATIN AMERICAN STUDIES**  
BRAZIL



**10 YEARS OF THE HARVARD-BRAZIL  
INITIATIVE ON EARLY CHILDHOOD  
DEVELOPMENT (2011-2021)**

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# Introduction



## DRCLAS BRAZIL

The David Rockefeller for Latin American Studies (DRCLAS) at Harvard University established the Brazil Studies Program (BSP) in Cambridge and the Brazil Office in São Paulo in 2006. The BSP and Brazil Office work in tandem to expand research, teaching and learning opportunities for Harvard faculty and students across the University, as well as to increase opportunities for Brazilians to study at Harvard and to strengthen ties between Harvard and Brazil.




## EARLY CHILDHOOD DEVELOPMENT

In 2011, guided by Brazilian entrepreneur Thomaz Srougi's initial vision and timely connections to key Brazilian players, DRCLAS embarked on a journey with the Center on the Developing Child at Harvard University (HCDC) to build an initiative focused on early childhood development (ECD) in Brazil. Scientific advances of the previous decades had demonstrated that experiences in early childhood have immense impacts on learning, wellbeing and productivity lasting through adulthood, making early childhood a unique period for equitable, high-return investments in human capital. Yet, policymakers and society at large do not immediately understand how critical the early years truly are to human, social and economic development.



## WORKING COLLECTIVELY



HCDC and DRCLAS joined forces with the Maria Cecília Souto Vidigal Foundation (FMCSV), Insper and the University of São Paulo Medical School (FMUSP) to create the Núcleo Ciência Pela Infância (NCPI), a collective impact initiative that aims to fuel a science driven ECD movement in Brazil. The Fundação José Luiz Egydio Setúbal joined NCPI from 2015-2017, while the Bernard van Leer Foundation (BvL) and Porticus joined in 2018.



## FROM SCIENCE TO IMPACT

NCPI originally consisted of 1) a multi-disciplinary Brazilian Scientific Committee that synthesizes the vast body of knowledge on ECD; 2) strategies to translate the science into accessible language and concepts that are disseminated through working papers, communications products and major international symposia; and 3) the Executive Leadership Program in Early Childhood Development, which trains senior public and civil society officials to become ECD leaders in Brazil. With the support of additional partners, NCPI has since grown to include 4) the iLab, a social innovation laboratory that designs and tests strategies with the potential to transform the lives of children facing adversity; and most recently 5) the Brazilian Center for Early Childhood Development, a major applied research center supported by the São Paulo Research Foundation (FAPESP) that aims to produce cutting-edge research provides a local evidence base and informs ECD policies and programs in Brazil.



## RESEARCH AND EXCHANGE

In parallel to collaborating with NCPI, DRCLAS has worked with Harvard faculty and students from across Schools and disciplines, as well as a diverse set of Brazilian researchers, government leaders and practitioners, to foster meaningful ECD research and exchange opportunities, both at Harvard and throughout Brazil. While many of such efforts directly intersect with the NCPI agenda, DRCLAS also develops and supports projects that are independent of NCPI. Importantly, DRCLAS's success in fostering research and exchange has derived from NCPI's thriving ecosystem, which has provided fertile grounds for Harvard faculty and students to develop collaborative projects, as well as ongoing financial support from FMCSV, which has provided stable conditions for strategic planning and the ability to seed investments. Faculty-led research groups, in turn, have successfully secured funding from additional sources, including Saving Brains and Harvard's Lemann Brazil Research Fund, allowing for more ambitious and robust projects.



## 10-YEAR REPORT

This report provides a summary of the main projects, findings, outcomes and impacts of the Harvard-Brazil Early Childhood Development Initiative.

# MAIN RESULTS

Over the past 10 years, DRCLAS and the broader Harvard-Brazil ECD Initiative have made important contributions through:

- ↘ Collaborative research that is generating knowledge across geographies and disciplines;
- ↘ Scientific cooperation that is helping to shape the field in Brazil and beyond;
- ↘ Cultivating transformational opportunities for the next generation of researchers and leaders; and
- ↘ Bridging scientific knowledge with policy, practice and public opinion in Brazil.



James Cairns, Senior Director  
for Strategic Engagements  
and Organizational Learning,  
Center on the Developing  
Child at Harvard University  
and Eduardo Queiroz, Former  
CEO of the Maria Cecília Souto  
Vidigal Foundation



# 10 *Years at a Glance*

Harvard faculty, students and staff, together with their partners and collaborators, have achieved much over the past decade through the NCPI collective impact initiative as well as ECD research and exchange activities



# Núcleo Ciência Pela Infância (NCPI)

## BRAZILIAN SCIENTIFIC COMMITTEE

26

BRAZILIAN  
PROFESSORS  
from across  
disciplines

9

WORKING PAPERS  
synthesizing cross-  
disciplinary science in  
accessible language


## EXECUTIVE LEADERSHIP PROGRAM

8  International  
Editions

2  Brazil-based  
Editions

500  
BRAZILIAN  
PARTICIPANTS  
from across  
sectors

100  
ACTION PLANS  
developed  
through the  
program

11 HARVARD PROFESSORS  
having taught in the program 

3 ONLINE COURSES on  
implementation science for  
early childhood development

# ECD Research and Exchange


## COLLABORATIVE RESEARCH

93 HARVARD RESEARCHERS  
have collaborated on the initiative

141 BRAZILIAN RESEARCHERS  
and collaborators have worked  
directly with Harvard researchers

63 PUBLICATIONS in peer-  
reviewed academic journals

## EXCHANGE AND LEARNING OPPORTUNITIES

47  BRAZILIAN  
RESEARCHERS  
spent time training  
at Harvard

42  HARVARD  
STUDENTS  
have studied  
ECD in Brazil

5 Brazil Office Fellows have  
worked on ECD in Brazil

**ILAB PRIMEIRA INFÂNCIA:  
BRAZILIAN INNOVATION CLUSTER**

**2** COHORTS of researchers, practioners and entrepreneurs

**8** TEAMS developing and testing new solutions

**INTERNATIONAL SYMPOSIUM**

**9**  **>20,000**

Editions held in 3 Brazilian capital cities

VIEWERS in-person and online 

**5** HARVARD PROFESSORS have travelled to Brazil to speak at the symposium

**PUBLIC  
ENGAGEMENT**

**26** ADDITIONAL EVENTS featuring Harvard Faculty have taken place with diverse audiences throughtout Brazil

**>80** 

COMMUNICATIONS PRODUCTS

including videos, press coverage, interviews and research summaries



Jack Schonkoff addressing the São Paulo City Legislature in March 2015

*“Over the past 10 years, we have seen the power of a deeply committed partnership focused on a shared vision to transform the early childhood ecosystem in Brazil. Drawing on diverse yet highly complementary areas of expertise contributed by NCPI and the research collaborations fostered by DRCLAS-Brazil, we have been able to contribute to changing public discourse, policy, practice, and research related to the health and development of young children. The close collaboration between DRCLAS and the Center on the Developing Child— two centers bringing distinct geographic and content expertise – offers a wonderful model for Harvard and other academic institutions of how strategic investment in a sustained mission can generate measurable impacts in knowledge generation, student education, and real-world change. It has been a great privilege for me and my colleagues to work closely with DRCLAS and our NCPI partners on this decade-long journey to improve the lives of young children and their families in Brazil.”*

**JACK SHONKOFF**

Julius B. Richmond FAMRI Professor of Child Health and Professor of Pediatrics; Director, Center on the Developing Child at Harvard University



## Timeline

A year-by-year overview of the initiative's main developments, from early exploratory meetings to the launch of a major research center.

2011 ▶

Key stakeholders discuss the budding ECD initiative at the DRCLAS Advisory Weekend in Cambridge. NCPI is formed and hosts its first Scientific Forum meeting, with participation of six Harvard faculty, as well as its first International Symposium

◀ 2017

An event at HGSE focused on early education in Brazil provided a platform for researchers to discuss potential collaborations. Four Harvard professors subsequently submit proposals to Harvard's newly established Lemann Brazil Research Fund.

◀ 2016

The Harvard-Brazil Public Health Collaborative Field Course includes a thematic focus on ECD and hosts a special symposium on "30 Years of Childhood Interventions in Ceará", with participation of the State's First Lady and Secretary of Education as well as the Mayors of Fortaleza and Sobral.

▶ 2018

Professor Charles Nelson and colleagues lay groundwork for the "Early Institutionalization Intervention Impact Project" in São Paulo. The project builds off the landmark Bucharest Early Intervention Project and attracts support from the Lumos Foundation, Inter-American Development Bank, Lemann Brazil Research Fund and others.

▶ 2019

Professor Dana McCoy and Elisa Altafim validate the Caregiver-Reported Early Development Index (CREDI) as a reliable measure of ECD in Brazil.

## 2012

Harvard's Center on the Developing Child hosts the inaugural Executive Leadership Program in Early Childhood Development, one of NCPI's flagship annual programs. Harvard students form an ECD research collective to exchange ideas about their projects in Brazil.

## 2013

DRCLAS awards grants to four faculty-led collaborative research projects that investigate diverse aspects of ECD in regions across Brazil: Salvador da Bahia, São Paulo, Cruzeiro do Sul, Acre, and the Xingu Indigenous territory.

## 2015

Harvard students intern with São Paulo Carinhosa, the City Hall's ECD multisectoral ECD program, and carry out research in the city. NCPI launches iLab Primeira Infância, a social innovation laboratory that designs and tests strategies with the potential to transform the lives of children facing adversity.

## 2014

NCPI brings together its scientific and public policy communities for the first time as it launches its inaugural Working Paper, with a special presentation from Professor Jack Shonkoff.

## 2020

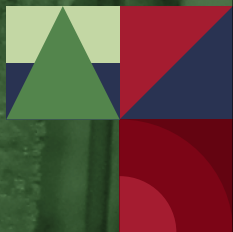
DRCLAS partners with Nexo Políticas Públicas to help communicate complex scientific knowledge in an accessible manner. Professor Meredith Rowe expands her engagement with ECD in Brazil and kicks off "The Development, Implementation and Evaluation of an Early Language Development Parenting Program for Social Assistance Community Centers in Brazil"

## 2021

Harvard faculty Jack Shonkoff, Marcia Castro, Aisha Yousafzai, and Dana McCoy join Brazilian partners for the launch of the Brazilian Center for Early Childhood Development. The center, an outgrowth of NCPI, is hosted by Insper and includes a 10-year funding commitment from the São Paulo Research Foundation (FAPESP).



Harvard PhD student and professor accompany a community health agent and local professor at a field visit in the western region of São Paulo



# *Collaborative Research*

Collaborative research is generating knowledge across geographies and disciplines. Projects range from the first population-based birth cohort study in the Amazon to the first randomized control trial of a digital parenting intervention to compliment Brazil's national home visiting program



# Research Across the Map

Faculty-led research projects in collaboration with Brazilian colleagues span a variety of topics and fields

## 📍 Nationwide

EXAMINING THE EFFECTS OF COVID19 RESTRICTIONS ON LITERACY PRACTICES IN A CHILD'S HOME: A GLOBAL SURVEY STUDY [↗](#)

## 📍 AC Acre

DISEASE BURDEN AND EARLY CHILDHOOD DEVELOPMENT: A BIRTH COHORT STUDY (PROJETO MINA) [↗](#)

## 📍 MT Mato Grosso

NUMBER AND COUNTING IN INDIGENOUS COMMUNITIES [↗](#)

## 📍 SC Santa Catarina

MATERNAL AND INFANT HEALTH IN SOUTHERN BRAZILIAN CITIES: A COHORT STUDY [↗](#)

## 📍 SP São Paulo

EARLY LIFE ADVERSITY AND CHILD DEVELOPMENT: EVIDENCE FROM THE WESTERN REGION PROJECT [↗](#)

THE EFFECTS ON EARLY BRAIN DEVELOPMENT OF A NURSE HOME VISITATION PROGRAM FOR PREGNANT YOUTH AND THEIR FAMILIES LIVING IN A POOR URBAN AREA [↗](#)

CAREGIVER REPORTED EARLY CHILDHOOD DEVELOPMENT INSTRUMENTS (CREDI): VALIDATION FOR BRAZIL [↗](#)

BRAIN GAMES: A CRÈCHES-BASED EARLY INTERVENTION PROGRAM TO IMPROVE CHILDREN'S EXECUTIVE FUNCTION AND SELF CONTROL SKILLS IN BRAZIL [↗](#)

EARLY INSTITUTIONALIZATION IMPACT INTERVENTION (EI-3) PROJECT [↗](#)

PARENT-CHILD INTERACTION AND CHILD LANGUAGE DEVELOPMENT IN LOW-INCOME FAMILIES [↗](#)

## 📍 RJ Rio de Janeiro

SEL KERNELS: A LOW-COST, EVIDENCE-BASED, AND SCALABLE APPROACH TO SOCIAL AND EMOTIONAL LEARNING IN BRAZILIAN ECE [↗](#)



## CE Ceará

POPULATION-BASED STUDIES ON MATERNAL HEALTH AND CHILD DEVELOPMENT →

THE DEVELOPMENT, IMPLEMENTATION, AND EVALUATION OF AN EARLY LANGUAGE DEVELOPMENT PARENTING PROGRAM FOR SOCIAL ASSISTANCE COMMUNITY CENTERS →

IRACEMA-COVID: IMPORTANCE OF THE RISKS ASSOCIATED WITH CORONAVIRUS ON MOTHERS' EXPERIENCES AND CHILD SUPPORT →

OPTIMAL DESIGN OF DIGITAL EARLY CHILDHOOD DEVELOPMENT INTERVENTIONS: A MULTIFACTORIAL RANDOMIZED CONTROL TRIAL →

## RN Rio Grande do Norte

EARLY LITERACY PREDICTION AND READING INTERVENTION FOR PRESCHOOLERS FROM LOW-INCOME FAMILIES →

## BA Bahia

EXECUTIVE FUNCTIONS AND EARLY COGNITIVE DEVELOPMENT OF LOW-INCOME CHILDREN →

PRESCHOOL INTERVENTION IN BRAZIL TO ENHANCE POOR CHILDREN'S SCHOOL READINESS →

AN EVIDENCE GAME-BASED INTERVENTION TO ENHANCE SOCIAL-EMOTIONAL SKILLS IN CONTEXT OF ADVERSITY IN BRAZIL: A COMPREHENSIVE APPROACH FOR TYPICAL CHILDREN AND CHILDREN WITH AUTISM →



Marcia Castro speaks with press at IPREDE, Instituto da Primeira Infância, in Fortaleza, Ceará

*“Ten years ago, DRCLAS and the Brazil Office in São Paulo brought together researchers from different fields of expertise, from Harvard and Brazilian institutions, to discuss early childhood development (ECD). That initiative was a game-changer for the Brazil office, for the Brazil Studies Program at DRCLAS, and for Brazil. It fostered new collaborations, novel forms of capacity building, and active policy discussions. It created the environment for the debate that resulted in the approval of the ECD legislation in Brazil and the launching of a national ECD program. I was able to build new collaborations to launch the first population-based birth cohort study from the prenatal period in the Brazilian Amazon, and to incorporate ECD as one of the topics in a Public Health field-based course that I teach in Brazil in January. Theses, dissertations, and peer-reviewed articles have resulted from those efforts. Most importantly, these efforts informed (and continue to inform) policy recommendations to improve the lives of families and children in Brazil, ultimately contributing to the nation’s human capital. **The ECD initiative is a model of how international collaborations should be made. I am honored to have been part of the ECD initiative from the very beginning.**”*

## MARCIA CASTRO


Andelot Professor of Demography and Chair of the Department of Global Health and Population, HSPH; Chair of DRCLAS Brazil Studies Program

# Overview of Findings



## **Brazilian children growing up in poor states have shown high rates of developmental delays in various domains, especially when living in adverse conditions.**

A population-level study in the state of Ceará, found a relatively high population-level prevalence (9.2%) of development delay in at least one domain among children 0–6 years, and there are robust associations between developmental delays and socioeconomic status ([link](#)). A related study in Ceará found that “...the greater number of adverse childhood experiences was linearly associated with lower developmental scores. Maternal mental health and intimate partner violence were also associated with lower development scores” ([link](#)). In Salvador da Bahia, underprivileged Brazilian children performed worse than age-matched norms on visual planning and working memory executive function tasks. Full neurological exams of these children found that several had undiagnosed syndromes or disorders, suggesting a considerable number of underprivileged Brazilian children may be suffering from epilepsy, ADHD, sleep disorders and/or severe developmental delays without diagnosis and treatment.



## **Local evidence bolsters the concept that adverse conditions “get under the skin” and affect the biological processes of child development.**

One of the initiative’s projects collected hair cortisol, which has been used as a biomarker of chronic stress, of mother-child dyads a context of high vulnerability. The researchers found that the maternal-infant hair cortisol correlations were high compared to other mother-child dyads in the existing literature, suggesting that stronger synchrony of maternal-infant cortisol levels exist in high-adversity contexts where families are faced with challenging circumstances ([link](#)). Another study provided “the first evidence from developing countries that that maternal psychopathology and low maternal education are associated with alterations in oscillatory neural activity in infants of adolescent mothers” ([link](#)).




**Brazilian parents living in adverse conditions engage less in parenting practices that are known to positively support child development.**

Exclusive breastfeeding in Cruzeiro do Sul, Acre, for example, was found to be considerably below international recommendations ([🔗 link](#)) and was associated with factors such as single motherhood and poverty ([🔗 link](#)). Patterns concerning the relation between parent communication measures, children's early use of pointing gestures, and children's later language skills were very similar between samples in São Paulo and in Boston, Massachusetts. Overall, the Boston mothers communicated more with their children, however, which may be due to overall differences in education levels across the two samples.




**There is a need to improve prenatal care and participation in educational activities during prenatal care, even though most postpartum women evaluate their prenatal care well.**

Consistent with the literature, in Ceará, pregnancy and neonatal care factors were associated with later child development outcomes ([🔗 link](#)). In a study that took place in Santa Catarina, only 1 in 5 women was oriented by health professionals about all topics recommended by the Ministry of Health for prenatal care. The majority were informed about the importance of exclusive breastfeeding up to 6 months, but only 46.6% were informed about breastfeeding techniques. Only 15.6% of women participated in at least one educational activity during prenatal care activity, and of these, only 60% attended two or more meetings. Nonetheless, about 80% of postpartum women in the sample rated as good or very good the physical structure of their prenatal care health units, the technical training of the health teams, and the clarity of the information provided.



**The negative impacts of infectious diseases on antenatal health and child development may be underestimated.**

Research supported by the initiative contradicts the common notion that vivax malaria during pregnancy is a relatively benign health condition. Even a single antenatal vivax malaria infection in the third trimester of pregnancy was found to be associated with adverse outcomes such as significant fetal growth impairment and lower maternal hemoglobin levels at delivery ([link](#)). Repeated vivax malaria infections in childhood are associated with anemia at 2 years of age ([link](#)).



**COVID-19 has had drastic negative effects on poor parents that will likely translate into negative effects on their children's development.**

A repeated cross-sectional survey in Ceará showed that the risk of food insecurity and maternal mental disorders increased during the pandemic ([link](#)). Another study with 1,041 pregnant women in Ceará found that 45.7% had common mental disorders and that negative feelings towards COVID-19 aggravated this high prevalence ([link](#)). A phone survey of Brain Games study families found that 68% of families reported high perceived stress levels and 79% felt anxious or uncomfortable due to the threat of COVID-19, and researchers will investigate the effects of such stressors on child development outcomes. Excess screen time exposure was already independently associated with poorer development outcomes among young children in Ceará ([link](#)), and the COVID-19 response measures appear to have increased the amount of screen time among young children in the state ([link](#)).



**Parenting and educational interventions have the potential to improve early development and learning outcomes.**

One study was the first to demonstrate that a Home Visiting Program grounded in attachment theory can enhance the early development of attachment in infants of adolescent mothers living in poverty in Brazil ([link](#)). Initial analyses suggest that children in daycares and preschools in São Paulo that were randomly assigned to receive the Brain Games intervention, who stayed in their assigned group for the full year, and whose teachers were coded as having higher levels of implementation showed significantly higher levels of inhibitory control and regulation-related motor skills relative to their peers in the control group. In Rio Grande do Norte, results after the first year of an early literacy and reading intervention showed that the children improved their ability to recognize letters and vocabulary, and in the second year they were better able to acquire reading via a phonological route.

# Peer-Reviewed Publications

Harvard-Brazil collaborative research groups have successfully published their studies on early childhood development in some of the world's most prestigious academic journals, including *Child Development*, *Developmental Science*, *American Journal of Epidemiology*, *Pediatrics* and *The Lancet*

63 

PUBLICATIONS  
in peer-reviewed  
academic journals

30 

HARVARD  
RESEARCHERS  
co-authored peer-  
reviewed publications  
with their Brazilian  
counterparts

95 

BRAZILIAN  
RESEARCHERS  
co-authored peer-  
reviewed publications  
with their Harvard  
counterparts

[“No Association between Low Birth Weight and Cardiovascular Risk Factors in Early Adulthood: Evidence from São Paulo, Brazil”](#)

2013 Health  
 PLoS One

[“Acquiring the Denotation of Object Denoting Nouns”](#)

2015 Language  
 Proceedings of Generative Approaches to Language Acquisition 2015

[“Assessing the effectiveness of Sao Paulo’s policy efforts in lowering teenage pregnancies and associated adverse birth outcomes”](#)

2015 Public Policy Adversity  
 Journal of Pregnancy and Child Health

[“Maternal depression and child development: Evidence from São Paulo’s Western Region Cohort Study”](#)

2016 Mental Health  
 Revista da Associação Médica Brasileira

[“Rollout of community-based family health strategy \(programa de saude de familia\) is associated with large reductions in neonatal mortality in São Paulo, Brazil”](#)

2016 Public Policy Health  
 SSM - Population Health

[“Factors Associated with Age at Breastfeeding Cessation in Amazonian Infants: Applying a Proximal-Distal Framework”](#)

2016 Parenting Health  
 Maternal and Child Health Journal

[“Behavioral and neural correlates of emotional development: typically developing infants and infants of depressed and/or anxious mothers”](#)

2016 Neuroscience  
 Social and Emotional  
 Jornal de Pediatria

[“An assessment of hair cortisol among postpartum Brazilian mothers and infants from a high-risk community in São Paulo: Intra-individual stability and association in mother–infant dyad”](#)

2017 Biology Mental Health  
 Developmental Psychobiology

[“Sex differences in DNA methylation of the cord blood are related to sex-bias psychiatric diseases”](#)

2017 Biology Mental Health  
 Scientific Reports

[“Time to change focus? Transitioning from higher neonatal to higher stillbirth mortality in São Paulo State, Brazil”](#)

2017 Health Public Policy  
 PLoS One


[“Who and where are the uncounted children? Inequalities in birth certificate coverage among children under five years in 94 countries using nationally representative household surveys”](#)

2017 Health  
 International Journal for Equity in Health

[“Gestational Weight Gain and Nutritional Status at Mid-Pregnancy in Brazilian Amazon”](#)


2017 Health  
 Annals Of Nutrition And Metabolism

## Collaborative Research

[“Prevalence of Exclusive Breastfeeding in the First Month of Life in Cruzeiro do Sul, Acre”](#) 

 2017  Parenting  Health

 Annals Of Nutrition And Metabolism

[“The Hidden Burden of Plasmodium vivax Malaria in Pregnancy in the Amazon: An Observational Study in Northwestern Brazil”](#) 


 2018  Health

 The American Journal of Tropical Medicine and Hygiene

[“Factors associated with anemia in young children in Brazil”](#) 


 2018  Health

 PLoS One

[“Predictors of vitamin A status among pregnant women in Western Brazilian Amazon”](#) 


 2018  Health

 British Journal of Nutrition

[“Overall and Sex-Specific Associations Between Fetal Adversity and Child Development at Age 1 Year: Evidence From Brazil”](#) 


 2018  Biology  Health  Adversity

 American Journal of Epidemiology

[“Effect of Vitamin A status during pregnancy on maternal anemia and newborn birth weight: results from a cohort study in the Western Brazilian Amazon”](#) 


 2018  Health

 European Journal of Nutrition

[“Measuring early childhood development in Brazil: validation of the Caregiver Reported Early Development Instruments \(CREDI\)”](#) 


 2018  Measurement

 Jornal de Pediatria

[“Measuring early childhood development at a global scale: Evidence from the Caregiver-Reported Early Development Instruments”](#) 


 2018  Measurement  Early Childhood

 Research Quarterly


[“Relations between parenting practices, socioeconomic status, and child behavior in Brazil”](#) 


 2018  Parenting  Adversity

 Children and Youth Services Review


[“Can placental characteristics predict child development delays? Findings from São Paulo Western Region Cohort Study”](#) 


 2018  Biology  Health

 Harvard Library (Dissertation submitted to Harvard T.H. Chan School of Public Health)

[“Effects of maternal psychopathology and education level on neurocognitive development in infants of adolescent mothers living in poverty in Brazil”](#) 

 2019  Neuroscience  Adversity

 Biological Psychiatry: Cognitive Neuroscience and Neuroimaging

[“Contextual variation in young children's acquisition of social-emotional skills”](#) 

 2019  Social and Emotional

 PLoS One

[“Factors affecting exclusive breastfeeding in the first month of life among Amazonian children”](#)

2019 Parenting Health

PLoS One

[“Early determinants of linear growth and weight attained in the first year of life in a malaria endemic region”](#)

2019 Health

PLoS One

[“High prevalence of gestational night blindness and maternal anemia in a population-based survey of Brazilian Amazonian postpartum women”](#)

2019 Health

PLoS One

[“Serum folate and vitamin B12 status in young Brazilian children”](#)

2019 Health

Public Health Nutrition

[“Vitamin D sufficiency in young Brazilian children: associated factors and relationship with vitamin A corrected for inflammatory status”](#)

2019 Health

Public Health Nutrition

[“Desigualdades em saúde: o desenvolvimento infantil nos diferentes grupos sociais”](#)

2019 Inequality Health

Revista da Escola de Enfermagem da USP

[“Prevalence and socioeconomic determinants of development delay among children in Ceará, Brazil: A population-based study”](#)

2019 Health Adversity

PLoS One

[“Gestational weight gain, nutritional status and blood pressure in pregnant women”](#)

2019 Health

Revista de Saúde Pública

[“Kangaroo mother care for preterm infants and child development – evidence from São Paulo, Brazil”](#)

2019 Parenting Health

Early Child Development and Care

[“Are inequities decreasing? Birth registration for children under five in low-income and middle-income countries, 1999–2016”](#)

2019 Health

BMJ Global Health

[“The influence of maternal anxiety and depression symptoms on fNIRS brain responses to emotional faces in 5- and 7-month-old infants”](#)

2020 Neuroscience Social and Emotional

Infant Behavior and Development

[“Caregiver depression is associated with hair cortisol in a low-income sample of preschool-aged children”](#)

2020 Biology Mental Health


Psychoneuroendocrinology

[“Cohort Profile: São Paulo Western Region Birth Cohort \(ROC\)”](#)


2020 Health Adversity

International Journal of Epidemiology


## Collaborative Research

[“Cohort profile: the Maternal and Child Health and Nutrition in Acre, Brazil, birth cohort study \(MINA-Brazil\)”](#) 


 2020  Health  
 [BMJ Open Access](#)

[“Agreement between antenatal gestational age by ultrasound and clinical records at birth: A prospective cohort in the Brazilian Amazon”](#) 


 2020  Health  
 [PLoS One](#)

[“Blood pressure levels and associated factors among pregnant women of the MINA-Brazil Study”](#) 


 2020  Health  
 [Ciência & Saúde Coletiva](#)






[“How Research Affects Policy: Experimental Evidence from 2,150 Brazilian Municipalities”](#) 


 2020  Public Policy  
 [American Economic Review](#)

[“Survive and Thrive in Brazil: The Boa Vista Early Childhood Program: study protocol of a stepped-wedge, randomized controlled trial”](#) 


 2020  Health  Measurement  
 [Trials](#)

[“Coronavirus disease 2019, food security and maternal mental health in Ceará, Brazil: a repeated cross-sectional survey”](#) 


 2020  COVID-19  Adversity  
 Mental Health  
 [Public Health Nutrition](#)

[“Promoting mother-infant relationships and underlying neural correlates: Results from a randomized controlled trial of a home-visiting program for adolescent mothers in Brazil”](#) 


 2021  Parenting  Neuroscience  
 [Developmental Science](#)

[“A home visit-based early childhood stimulation programme in Brazil—a randomized controlled trial”](#) 


 2021  Parenting  Public Policy  
 [Health Policy and Planning](#)

[“Unpacking the Impacts of a Universal Parenting Program on Child Behavior”](#) 


 2021  Parenting  
 [Child Development](#)

[“Measuring early childhood development: considerations and evidence regarding the Caregiver Reported Early Development Instruments”](#) 


 2021  Measurement  
 [Annals of the New York Academy of Sciences](#)



[“Validation of motor, cognitive, language, and socio-emotional subscales using the Caregiver Reported Early Development Instruments: An application of multidimensional item factor analysis”](#) 


 2021  Measurement  
 [International Journal of Behavioral Development](#)

[“Breastfeeding, Physical Growth, and Cognitive Development”](#) 


 2021  Parenting  Health  
 [Pediatrics](#)

[“Associations between neighborhood violence during pregnancy and birth outcomes: evidence from São Paulo’s Western Region Birth Cohort”](#) 


 2021  Adversity  Health  
 BMC Public Health

[“Adverse Childhood Experiences and Child Development Outcomes in Ceará, Brazil: A Population-based Study”](#) 


 2021  Adversity  Health  
 American Journal of Preventive Medicine

[“Maternal and neonatal factors associated with child development in Ceará, Brazil: a population-based study”](#) 


 2021  Health  
 BMC Pediatrics

[“Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis”](#) 


 2021  Parenting  
 PLoS Medicine

[“Low-level Plasmodium vivax exposure, maternal antibodies, and anemia in early childhood: Population-based birth cohort study in Amazonian Brazil”](#) 


 2021  Health  Biology  
 PLoS Neglected Tropical Diseases

[“COVID-19 and mental health of pregnant women in Ceará, Brazil”](#) 

 2021  Mental Health  COVID-19  
 Revista de Saúde Pública

[“Geospatial analysis of exposure to violent crime during pregnancy and adverse birth outcomes: Evidence from São Paulo’s Western Region Birth Cohort”](#) 


 2021  Adversity  Health  
 BMC Public Health

[“Prenatal care and preterm birth in the Western Brazilian Amazon: a population-based study”](#) 


 2021  Health  
 Global Public Health

[“COVID-19 poses alarming pregnancy and postpartum mortality risk in Brazil”](#) 


 2021  COVID-19  Health  
 The Lancet

[“Undernutrition and short duration of breastfeeding association with child development in Ceará, Semi-Arid Region of Brazil: a population-based study”](#) 


 2021  Health  Parenting  Adversity  
 Jornal de Pediatria

[“COVID-19 and children’s screen time in Ceará, Brazil: a repeated cross-sectional survey”](#) 

 2021  COVID-19  Parenting  
 Journal of Children and Media

[“Screen time and early childhood development in Ceará, Brazil: a population-based study”](#) 

 2021  Health  Parenting  
 BMC Public Health

[“Neonatal mortality prediction with routinely collected data: a machine learning approach”](#) 

 2021  Health  
 BMC Pediatrics



Helena Brentani, Professor at the University of São Paulo, and Maria Malta Campos, Professor at Pontifical Catholic University of São Paulo

# *Scientific Cooperation*

Scientific cooperation between researchers from Harvard and Brazil, spanning from the identification of research gaps to the cultural validation of measures of child development, from methodological discussions to technology transfer to data sharing, is helping to shape the field of early childhood development in Brazil and beyond



GUILHERME POLANCZYK AND EURIPEDES CONSTANTINO MIGUEL DISCUSS ONGOING COHORT AND INTERVENTION STUDY WITH HARVARD FACULTY RONALD KESSLER, CHARLES NELSON, GUNTHER FINK, MYRON BELFER AND CINDY LIU AT THE CENTER ON THE DEVELOPING CHILD IN 2015

24



HARVARD FACULTY have travelled to Brazil

144

BRAZILIAN RESEARCHERS have worked directly with Harvard researchers



Several characteristics of the early childhood development field made it an appealing topic for the DRCLAS Brazil Office. A few of the main drivers of DRCLAS's decision to embark on the ECD initiative included:

### **HARVARD'S STRENGTH IN ECD STUDIES, AND BRAZIL'S BUDDING INTEREST IN THE TOPIC**

Harvard University is one of the world's leading institutions in terms of academic production related to early childhood development. According to a bibliometric analysis conducted by Pacto in 2021, Harvard University is first in ranking of documents produced on the topic in the Scopus database (1,569) and third in ranking of documents produced in the Web of Science database (1,200). Importantly, the Center on the Developing Child at Harvard

University was already a natural convener of early childhood experts at Harvard and was eager to expand its international presence. Equally important, early childhood development was a relatively new concept in Brazil, one which the local academic community had not yet mobilized around, but the federal government had already started increasing its emphasis on support for young children, especially those living in poverty. Thus, there was a sense that Harvard could work with Brazilian partners to make tangible contributions to early childhood science and related public policies in Brazil.

## MULTIDISCIPLINARY APPROACH

Early childhood development is a topic that connects with a wide array of academic disciplines, including biology, medicine, public health, psychology, education, sociology, economics, law, and public policy, among others. The Center on the Developing Child had already recognized and addressed the need to convene researchers from distinct fields to build an integrated developmental science that connects with policy and practice. As an inter-faculty initiative at Harvard, the multidisciplinary nature of early childhood development research merged well with DRCLAS's mandate to collaborate with schools, departments, and centers from across the University. It also presented an opportunity to engage with leading Brazilian researchers across several disciplines. Inspired by the Center on the Developing Child's experience, the Núcleo Ciência Pela Infância was created with a multidisciplinary Scientific Committee that aimed to integrate scientific evidence from multiple fields and represent a unified scientific voice for early childhood development in Brazil.

## HIGH POTENTIAL FOR REDUCING SOCIAL AND ECONOMIC INEQUALITIES

Brazil has extremely high levels of social and economic inequality, which pose threats to the country's democracy and development. The revolutionary advances of the biological sciences in previous decades had shown that young children in vulnerable social and economic conditions often face adversities that impair healthy development, often through ongoing exposure to toxic stresses. Reducing negative exposures and increasing positive experiences in early childhood, when the brain is highly plastic and several critical and sensitive periods of development take place, improves health, learning and behavior throughout the lifespan. Research in economics had shown that interventions in early childhood led to much higher economic returns for a given society as compared to intervening after the early childhood period. Furthermore, high-quality investments in early childhood reduce social and economic inequalities while simultaneously increasing future productivity and overall economic growth, so early childhood investments are often able to garner political support from a wide range of the ideological spectrum.



Dana McCoy presents her research during her first trip to Brazil in 2015

***“The Brazil Office has been such an incredible resource for me, not only financially, but also intellectually, substantively, and logistically. I’m not exaggerating when I say that without this collaborative initiative I probably wouldn’t be conducting research in Brazil at all. Brazil has become a key country for the ECD field globally, and I’m very grateful for everything that Harvard and its local partners have been doing to support faculty and student work, as well as policy and program efforts to benefit young children.”***

## DANA CHARLES MCCOY, PHD

Max & Marie Kargman  
Associate Professor of  
Human Development  
& Urban Education  
Advancement at Harvard  
Graduate School of  
Education



Since the initiative's launch in 2011, scientific cooperation between Harvard and Brazil has helped shape the field of early childhood development research in the following ways:

### **EXPANDING THE PORTFOLIO OF TOOLS AND TECHNIQUES FOR MEASURING AND ANALYZING CHILD DEVELOPMENT IN BRAZIL**

Early in the initiative, it became apparent that an important challenge to building collaborations between Harvard and Brazilian researchers was the fact that there was often a disconnect between measurement tools and techniques that were being employed to assess child development, and thus, cross-country comparisons would be difficult. Several Harvard-Brazil research collaborations aimed to bridge this gap through validating instruments from abroad as reliable measures in Brazil and through transferring cutting-edge technologies and technical know-how to research groups in Brazil. Examples include:

#### **↘ Caregiver Reported Early Development Instruments (CREDI)**

The CREDI, developed by HGSE Professor Dana McCoy and colleagues, is a population-level measure of early childhood development for children from birth to age three. As it is open source, relies on caregiver reports and was developed for the global community, it is a measure that governments can easily use to monitor ECD outcomes in their jurisdictions. Former HGSE Visiting Researcher Elisa Altafim and USP Professor Alexandra Brentani helped validate the measure for use in Brazil. The city of Recife, for example, has already evaluated 3,000 children using CREDI.

#### **↘ Electroencephalography (EEG)**

EEG is a non-invasive technique for measuring electrical activity in the brain. While EEG systems existed in Brazil prior to the Harvard-Brazil ECD initiative, there were only a couple of Brazilian research groups employing EEG to study early childhood development. Professor Charles Nelson and his team at the Laboratories for Developmental Cognitive Neurosciences at the Boston Children's Hospital had extensive experience using EEG for studies on early brain development and, together with their collaborators, trained multiple Brazilian researchers on how to use EEG with young children, in addition to lending EEG systems to counterparts at the University of São Paulo and Instituto PENSI for collaborative research projects.

#### **↘ Functional Near-Infrared Spectroscopy (fNIRS)**

Like EEG, fNIRS is a non-invasive neuroimaging technique to monitor neural activity. To our knowledge, prior to the Harvard-Brazil ECD initiative, fNIRS was not yet being used for ECD studies in Brazil. Juliana Porto, a doctoral student at PUC-RS, which has one of the most advanced neuroscience facilities in Brazil, spent several semesters at the BCH Laboratories of Developmental Cognitive Neuroscience to gain experience using fNIRS for early brain development research. She returned to Brazil and was one of the first researchers to employ a new fNIRS system that PUC-RS has recently purchased for her doctoral dissertation research.



Guilherme Polanczyk during lecture on early childhood development at the Harvard T.H. Chan School of Public Health in 2015

### ↳ Child Language Data Exchange System (CHILDES)

CHILDES, commonly employed by HGSE Professor Meredith Rowe, is a system for coding and analyzing data on verbal interactions between caregivers and children. The program is able to automatically analyze transcripts of interactions to measure maternal inputs that studies show to predict language development, such as quantity of talk, vocabulary diversity, quantity and diversity of gestures, syntactic complexity, use of questions and use of directives. USP Professor Guilherme Polanczyk and his research team already had collected a rich set of video recordings of mother and child interactions through a cohort study, and two of the researchers, Renata Amavel and Fernanda Alcarão, visited Professor Rowe's lab at Harvard to train on CHILDES and apply the program to the video recordings in São Paulo.

*“Our research group has extensively benefited from the work of DRCLAS to identify opportunities and provide conditions to learn and collaborate with colleagues involved in the field of early childhood development at Harvard University. **Training opportunities for students, scientific visits and meetings, transfer of technologies, new research collaborations, successful joint grant applications and publications were some of the activities that we have developed.** Undoubtedly, these opportunities increased our research capacity and stimulated new ideas and projects. We are working continuously to transfer these benefits to the children and their families.”*

### GUILHERME POLANCZYK

Associate Professor in Child and Adolescent Psychiatry; Coordinator of the Research Group on Neurodevelopment and Mental Health, University of São Paulo

### **BUILDING COHORT STUDIES**

Longitudinal studies that collect a variety of data on families and children over time provide researchers with the ability to analyze and associate health, education and behavioral risk factors, as well as protective factors, with indicators of parenting practices and indicators child development at later points in time. While it is effortful and expensive to collect data periodically, as compared to analyzing secondary datasets, for example, the return in terms of knowledge generation and academic publications is very high. Researchers with different disciplinary and topical perspectives can add new measures to the data collection process at strategic points in time to address different questions and hypotheses. From the beginning, the Harvard-Brazil ECD initiative has looked to invest in and capitalize from new and existing cohort studies, including longitudinal studies in São Paulo, Ceará and Acre. The latter, enabled by a DRCLAS faculty grant, constituted the first population-based cohort study in the entire Brazilian Amazon. The results have proven this strategy to be highly successful; most of the peer-reviewed publications cited in the previous section are products of the aforementioned cohort studies.

### **DEVELOPING AND EVALUATING INTERVENTIONS**

One of the initiative's guiding questions has been "what works (and what doesn't work) in promoting early childhood development?". Insights to this question are particularly helpful and practical for policymakers that want to improve child development outcomes but are not sure how to do so. It is desirable for policymakers to provide programs and interventions that researchers have already found to be effective through rigorous impact analyses. Therefore, program developers and researchers from Harvard and Brazil have been working together on developing and evaluating a variety

of interventions to promote positive parenting practices as well as teaching practices in daycare and early education settings. Such interventions include home visiting and center-based programs focused on developing important domains such as numeracy, logic, language, early literacy, executive functions, and social and emotional learning.

### **INTRODUCING IMPLEMENTATION RESEARCH**

HSPH Professor Aisha Yousafzai is one of the primary voices of a push to leverage the emerging field of implementation research to better understand and to improve the effectiveness of early childhood programs and services. Professor Yousafzai, together with HGSE Professor Dana McCoy, organized a conference on implementation research and ECD at Harvard, and DRCLAS flew the two main leaders of the Brazilian Center for Early Childhood Development, which was at the time in its planning stages, to Boston to attend and learn more about how to incorporate implementation research into the center's agenda. One of the two Postdoctoral Research Fellows at the center, advised by Professor Yousafzai and supported by DRCLAS and FMCSV, is focused on implementation and intervention. Professor Yousafzai also lectured at the 3 editions of the online course organized by NCPI and Insper that focuses specifically on implementation challenges and strategies.

### **RESPONDING TO COVID-19**

The COVID-19 pandemic took the lives of many primary and secondary caregivers and was a significant disruption to early childhood care and education services around the world. Brazil was among the world's hardest hit countries, and from the pandemic's outset the Harvard-Brazil ECD initiative looked to understand and mitigate the effects that the pandemic would have on the development

of Brazilian children. The Núcleo Ciência Pela Infância published a special edition working paper titled “Repercussions of the COVID-19 Pandemic on Early Childhood Development” along with a webinar and series of expert short videos in May of 2020 to help raise public awareness about the issue. The Brazilian Center for Early Childhood Development began replanning its research agenda to account for and study the impacts of COVID-19 on child development in Brazil. Harvard researchers worked with research collaborators in Ceará to build a survey-based cohort study that aims to understand the impact of COVID-19 and social distancing on parenting, maternal mental health, and child development. A global survey study led by Professor Nadine Gaab was brought to Brazil to examine how restrictions caused by the pandemic affected literacy practices in a child’s home. The strong link between child development and topics such as maternal mental health and violence, both of which worsened during the pandemic, we discussed in the NCPI International Symposium, webinars, and communications pieces.



Alexandra Brentani during the Harvard-Brazil scientific convening hosted by the University of São Paulo Medical School in 2011

*“In 2012, supported by DRCLAS, I spent a semester at Harvard as visiting scholar at the Center on the Developing Child and the School of Public Health, under the supervision of Gunther Fink and Jack Shonkoff. With a DRCLAS faculty grant we started a longitudinal study in São Paulo, the Western Region Birth Cohort (ROC), one of the most important study platforms of FMUSP’s Department of Pediatrics, which has been used by many researchers and graduate students, including Harvard students like Katherine Andrews and Noah Gordon. **Within the ROC-COHORT, many other collaborations became possible, like the CREDI validation with Dana McCoy, the Brain Games and BASE Social Emotional Learning study with Stephanie Jones’s EASEL Lab, and the study of toxic stress biomarkers with Cindy Liu.**”*

## ALEXANDRA VALERIA MARIA BRENTANI

Professor in the Department of Pediatrics; Director of the Center for Child Development - CEDI, University of São Paulo Medical School

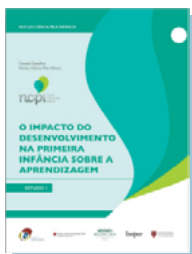


# NCPI Scientific Committee

The NCPI Scientific Committee is a multidisciplinary group of Brazilian researchers that meets regularly to synthesize scientific knowledge about early childhood development generated by diverse fields of scholarship into an integrated developmental perspective. Inspired by the National Scientific Council on the Developing Child, housed within the Center on the Developing Child at Harvard University, the NCPI Scientific Committee aims to communicate complex concepts and key science-based messages to policymakers, public managers and civil society leaders through easily-understood language and metaphors.

The committee identifies topics that are central to child development and can influence the formulation of Brazilian public policies and programs related to the well-being of children and their families, especially the most vulnerable. The discussions and ongoing consensus-building processes result in Working Papers and complementary communications products. Members of the Scientific Committee also regularly collaborate with other NCPI workstreams, such as the International Symposium, Executive Leadership Program and Innovation Lab, and represent NCPI in interviews and media statements.

**9** WORKING PAPERS synthesizing cross-disciplinary science in accessible language, along with complementary communications products



The Impact of Early Childhood Development on Learning



Executive Functions and Early Childhood Development: Necessary Skills for Autonomy



The Importance of Family Bonds in Early Childhood



Home Visits as a Strategy to Promote Parenting and Development in Early Childhood



Impacts of the Family Health Strategy and Challenges for Child Development



The Neighborhood and Whole-Child Development in Early Childhood



Established in 2011 as the scientific anchor of the Núcleo Ciência Pela Infância partnership, the committee is currently composed of **26 leading researchers** whose expertise span the areas of education, medicine, public health, nursing, epidemiology, neuroscience, psychology, psychiatry, economics, demography, urban planning, management and public policy.



NCPI SCIENTIFIC COMMITTEE MEMBERS



AVAILABLE IN PORTUGUESE AT THE NCPI CONTENT LIBRARY



[Repercussions of the Covid-19 Pandemic for Child Development](#)



[Racism, Early Education and Early Childhood Development](#)



[High-Quality Early Education](#)

*“I’m grateful for the opportunity to be part of a group of researchers with such solid and diverse academic training related to child development. The complexity of our task to synthesize and update the scientific knowledge base on child development led to beneficial conversations around connecting the dots of scientific thought, beyond each of our own specific fields of academic production, with the aim of clearly communicating with Brazilian public policymakers.”*

## DARCI NEVES DOS SANTOS

Adjunct Professor, Institute of Collective Health, Federal University of Bahia



# ***NCPI Innovation Lab***

The iLab is NCPI's social innovation laboratory focused on creating and testing science-based solutions that can transform the lives of children in vulnerable situations and have the potential to be applied in scale. Connected to the Frontiers of Innovation initiative led by the Center on the Developing Child at Harvard University (HCDC), iLab represents a Brazilian Innovation Cluster in a broader learning community of researchers, practitioners and entrepreneurs that includes clusters from Mexico, Canada and the United States.

The iLab and its sister innovation clusters utilize the IDEAS Impact Framework, which is a “structured but flexible approach that facilitates program development, implementation, testing, evaluation and fast-cycle interaction.

The report linked below provides a didactic summary of the iLab experience and learnings:



CAMINHOS E APRENDIZADOS PARA INICIATIVAS FOCADAS NA PRIMEIRA INFÂNCIA



ILAB SUPPORT TEAM

## COHORT 1 PILOT PROJECTS

FORMAÇÃO DE VÍNCULO NA ADVERSIDADE  
(FORMING BONDS IN ADVERSITY)

📍 **FORTALEZA, CEARÁ**

FORTALECENDO LAÇOS  
(STRENGTHENING TIES)

📍 **Ribeirão Preto, São Paulo**

PROGRAMA BEM: BRINCAR ENSINA A MUDAR  
(PLAY TEACHES CHANGE)

📍 **São Paulo, São Paulo**

PROJETO MOSAICO FÁCIL  
(FÁCIL MOSAIC PROJECT)

📍 **Aranaú, Ceará**



## COHORT 2 PILOT PROJECTS

ADOÇÃO: INÍCIO DOS NOVOS VÍNCULOS  
(ADOPTION: THE BEGINNING OF NEW BONDS)

📍 **Rio Grande do Sul** and **São Paulo**

BOT.DOM

📍 **Florianópolis, Santa Catarina**

EQUIDADE NA INFÂNCIA – ENI  
(EQUITY IN EARLY CHILDHOOD)

📍 **São Paulo, SP**

PASSARINHO (LITTLE BIRDS)

📍 **Bujari, Acre**



Left to right: Marcia Machado, Álvaro Leite, Antonio Ledo Cunha, Sullivan Mota and Ana Estela Haddad participate in brainstorming exercise at iLab's first workshop in 2015

*“I learned a lot about new data analysis methods, utilizing advanced statistical models, and I became familiar with planning and executing a project using a “viability test”. This methodology gave us new knowledge to apply while planning future interventions. In our pilot, we designed an intervention with 15 mothers who live in highly vulnerable contexts. We filmed the interactions between mothers and their children and offered positive feedback based on theory for building bonds. We held focus groups with the mothers and analyzed the positive changes caused by the intervention. We are now growing the scope of the intervention to evaluate how fathers respond to this positive feedback model. IPREDE, which hosted our intervention, is looking to adopt the learnings of this experience in their work with building family relationships, and we hope that this model can be incorporated into the public health system in the future.”*

### MÁRCIA MARIA TAVARES MACHADO

Dean of Extension and Associate  
Professor of Collective Health, Federal  
University of Ceará

# *Brazilian Center for Early Childhood Development*

The Brazilian Center for Early Childhood Development (Centro Brasileiro de Pesquisa Aplicada à Primeira Infância - CPAPI) is a major research center that grew out of the NCPI Scientific Committee. Housed at Insper and supported by the São Paulo State Research Foundation (FAPESP), the Maria Cecília Souto Vidigal Foundation, the Bernard van Leer Foundation and Porticus, the center aims to foster equal opportunities for children aged 0 to 6 years by generating relevant scientific knowledge and evidence on ECD in Brazil and transferring learnings, technologies and data to policymakers and governments throughout the country.

CPAPI was launched in 2021 and has an anticipated timeline of 10 years for its initial stage of funding and partnerships. CPAPI's research agenda is developed by an interdisciplinary group of 6 primary investigators and 12 associate researchers. CPAPI's Brazil-based researchers also draw ideas and advice from an international scientific advisory committee composed of five global experts:

- ✚ Aisha Yousafzai (Harvard T.H. Chan School of Public Health)
- ✚ Charles Nelson (Harvard Medical School and Harvard Graduate School of Education)
- ✚ Dana McCoy (Harvard Graduate School of Education)
- ✚ Flavio Cunha (Rice University)
- ✚ Marcia Castro (Harvard T.H. Chan School of Public Health)



Left to right, top to bottom: Aisha Yousafzai, Claudio Haddad, Marcia Castro, Naercio Menezes Filho, Jack Shonkoff, Mariana Luz, Luiz Eugênio Mello, Dana McCoy, Sylvio Canuto, Marcos Lisboa, Flavio Cunha and Roberta Ricardes at the Brazilian Center for Early Childhood Development launch event



VIDEO: BRAZILIAN CENTER FOR EARLY CHILDHOOD DEVELOPMENT LAUNCH EVENT

In partnership with CPAPI and Professor Aisha Yousafzai of the Harvard T.H. Chan School of Public Health, in early 2021 DRCLAS opened a public call for two postdoctoral research fellowship positions, the first for Intervention and Implementation Research and the second for Trials.

A highly impressive pool of 38 eligible candidates applied to the fellowship positions. After a rigorous selection process, two promising young Brazilian researchers were selected:

#### CPAPI-DRCLAS POSTDOCTORAL FELLOWS



**BRUNA LARISSA SEIBEL**

Ph.D. in Psychology, Federal University of Rio Grande do Sul [↗](#)



**JULIANA ARAUJO TEIXEIRA**

Ph.D. in Nutrition in Public Health, University of São Paulo [↗](#)



*“DRCLAS has played an important role in the development of new initiatives that have increased awareness of the importance of ECD in Brazilian society. The NCPI Scientific Committee was inspired by and benefited from dialogue with the National Scientific Council on the Developing Child at HCDC. **The creation of the Brazilian Center for Early Childhood Development (CPAPI) benefited from conversations with NSCDC-HCDC researchers and from conferences organized by Harvard professors about the implementation of ECD programs.** DRCLAS and Professor Aisha Yousafzai are currently supporting two CPAPI post-docs and will facilitate interactions with Harvard experts to discuss the implementation of CPAPI projects”*

#### **NAERCIO AQUINO MENEZES FILHO**

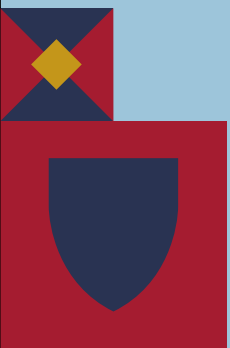
Ruth Cardoso Chair and Full Professor, Insper; Associate Professor, University of São Paulo; Director of the Brazilian Center for Early Childhood Development (CPAPI)



Ana Estela Haddad, Professor at the University of São Paulo with Angela Uwase Rangira, Harvard College '20, during Harvard-Brazil Public Health Collaborative Field Course in 2020

# *Cultivating the Next Generation of Researchers and Leaders*

The initiative has created an array of unique educational and experiential learning opportunities for students of all university levels from Harvard and Brazil



**PROVIDING TRANSFORMATIONAL EDUCATIONAL EXPERIENCES IS A CORE TENANT OF HARVARD UNIVERSITY'S MISSION.**

Through the Harvard-Brazil ECD initiative, DRCLAS has created a variety of enriching exchange experiences that engage students and young researchers with novel perspectives, tools and networks that transform their prospects as future leaders of the ECD field. In this section we provide a sample of the educational opportunities and outcomes generated by the initiative.

>67

HARVARD STUDENTS AND JUNIOR RESEARCHERS have studied or worked with ECD in Brazil

5

BRAZIL OFFICE FELLOWS have spent a year working with the ECD initiative in Brazil

>78

BRAZILIAN STUDENTS AND JUNIOR RESEARCHERS have had significant training experiences through Harvard's engagement with ECD in Brazil

**PUBLIC HEALTH COLLABORATIVE FIELD COURSE**

Professor Marcia Castro has incorporated ECD into the annual Public Health Collaborative Field Course that she leads in Brazil. In addition to lectures on site visits on ECD, groups composed of 3 Harvard students and 3 Brazilian students develop projects to address real challenges posed by real programs or organizations aiming to improve ECD outcomes in Brazil.



➤ ECD Group Projects developed through the Public Health Collaborative Field Course:

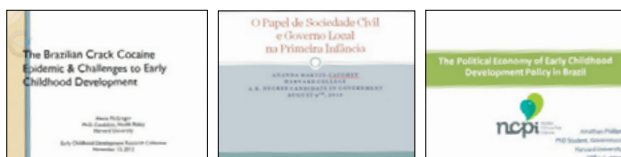
**2016:** THE ROLE OF SOCIAL SUPPORT ON CHILDHOOD DEVELOPMENT: AN ASSESSMENT OF THE TREVO DE QUATRO FOLHAS' SOCIAL MOTHERS PROJECT

**2018:** EARLY CHILDHOOD DEVELOPMENT: PARTICIPATORY LEARNING FOR CAREGIVERS OF CHILDREN WITH DISABILITIES

**2020:** INCREASING COMMUNITY HEALTH AGENTS' USE OF THE CHILD HEALTH BOOKLET

## EARLY CHILDHOOD DEVELOPMENT RESEARCH COLLECTIVE

In 2012, a multidisciplinary group of six students, at the undergraduate, masters and PhD levels, representing five Harvard schools (College, Graduate School of Design, School of Public Health, Medical School and Graduate School of Arts and Sciences), formed a research collective and organized a seminar series to share their experiences and present their findings related to early childhood development in Brazil.



STUDENTS PRESENT RESEARCH ON EARLY DEVELOPMENT (HARVARD CRIMSON)



**KATHRYN ANDREWS** (SCD '18) wrote the third paper of her doctoral dissertation, titled “Can placental characteristics predict

child development delays? Findings from São Paulo Western Region Cohort Study”, based on her research with Professors Günther Fink and Alexandra Brentani in a vulnerable region of São Paulo.

### SELECT TRAJECTORIES AND TESTIMONIALS

THE SELECTION OF TRAJECTORIES AND SHORT TESTIMONIALS BELOW PROVIDES A GLIMPSE INTO THE IMPACT THAT THE OPPORTUNITIES ENABLED BY DRCLAS AND ITS PARTNERS HAVE HAD ON THE LIVES AND CAREERS OF SEVERAL PROMISING ECD RESEARCHERS AND LEADERS

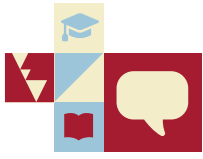


*“A key focus of the Harvard-Brazil early childhood initiatives has been the opportunity to work with early career academics and cultivating the next generation of researchers and leaders in the field. **Mentoring, creating networking opportunities, and the opportunities to connect Brazil based researchers with colleagues not only in the Latin American region, but around the world has led to deeper critical reflection about ongoing work, new ideas and collaborations.** This has happened during a critical time for the early childhood field where global events such as the pandemic demand innovations locally and globally.”*

### AISHA YOUSAFZAI

Associate Professor of Global Health, Harvard T.H. Chan School of Public Health

## Select Trajectories and Testimonials



**“Collaborating with the Harvard-Brazil ECD initiative was transformative and pivotal in my personal and professional trajectory.**

*From visiting SUS clinics throughout São Paulo with São Paulo Carinhosa to mapping out Child Protective Services in the city, these eclectic experiences gave me the practical understanding to ground the theoretical frameworks I would later learn in my MPH program. My experiences with the Harvard-Brazil ECD taught me the importance of intersectoral and interdisciplinary work, as well as the challenges that arise in attempting to do so. Moreover, through research with Dr. Charles Nelson, his collaborators at FMUSP, and the participants of the Núcleo Ciência Pela Infância, I was introduced to the seemingly unconventional path of physician advocates – a path that embodies the type of holistic medicine I wish to practice. As I apply to Ob/Gyn residencies in the fall, I plan to merge health policy work with my clinical practice, a passion I first fostered in Brazil, and hope to eventually find my way back to Brazil.”*



**JASMINE FERNANDEZ**

AB '16,  
Neurobiology  
Harvard College

**2014**

Summer Research Internship with Charles Nelson's ECD collaborators at University of São Paulo Medical School (FMUSP)

**2015**

Summer Internship with São Paulo Carinhosa, the megacity's ECD initiative overseen by the First Lady of São Paulo

**2016-17**

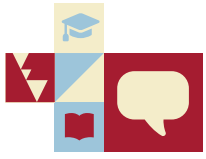
Brazil Office Fellowship, focused on ECD initiative, including project planning, drafting grant proposals and organizing faculty visits

**2017-19**

Master in Public Health at Tufts University School of Medicine focused on Health Service Management & Policy

**2019-ongoing**

Medical Student at Tufts University, planning on applying to OB/GYN residencies



***“Being at Harvard enabled direct contact with students and professors from the Department of Psychology and the School of Public Health, resulting in collaboration in research, participation in events and high-impact publications.***

*As memorable moments, I was able to participate in research with children, develop research protocols and think about low-cost cognitive interventions that could be used in different countries, including Brazil. The learning accumulated over the years allowed me to write and execute research projects in collaboration with Harvard professors, in addition, I accumulated knowledge and skills that involve everything from presenting a conference or lecture, thinking about new research and even defending a scientific concept and its evidence. One aspect that delighted me was being in an environment where the discussion of knowledge is highly encouraged and happens all the time, in the cafeteria, classroom and gardens. All the experience I had at Harvard, an institution respected for its excellence, was important when I acquired my faculty position and started my own laboratory in Brazil.”*



**CHRISSIE FERREIRA  
DE CARVALHO**

Visiting Researcher &  
Postdoctoral Researcher,  
Department of  
Psychology, Faculty of  
Arts & Sciences

**2015-16**

Visiting Researcher at Harvard Laboratory of Developmental Studies under Elizabeth Spelke during PhD in Psychology at Federal University of Bahia

**2017**

Defends PhD Dissertation “Executive functions stimulation program: contributions to the cognitive development of children exposed to manganese”

**2018-19**

Post-Doc at Harvard Laboratory of Developmental Studies; Lemann Brazil Research Fund award for research with Elizabeth Spelke; selected for faculty position at Federal University of Santa Catarina

**2020-ongoing**

Research collaboration with Jesse Snedeker on social-emotional development intervention supported by the Lemann Brazil Research Fund

## Select Trajectories and Testimonials



***“Through my experiences with Harvard I’ve deepened my scientific knowledge and skills related to clinical trials, advanced statistical analysis and methodologies, measurement, developing and implementing interventions for families and children facing adversity, using science to develop a theory of change, innovation methodologies, policy change, translational science and leadership.***

*Having the opportunity to discuss my projects with Harvard professors and international researchers positively influenced my Ph.D. studies and helped me become a more effective researcher. My collaborations with researchers Harvard and USP related to parenting practices have resulted in several publications in high impact academic journals and provided a model for how the Theory of Change can be used in evaluation research in diverse parts of the world.”*



**ELISA RACHEL PISANI ALTAFIM**

Visiting Predoctoral Fellow, Harvard Graduate School of Education

**2014**  
Participates in Principles and Practice of Clinical Research course (PPCR) at Harvard Medical School

**2016**  
Visiting Predoctoral Fellow at the Harvard Graduate School of Education under Professor Dana McCoy, funded by FAPESP

**2016**  
Begins collaboration with NCPI iLab as a researcher and one of the developers of the Strengthening Bonds program

**2017**  
Defends PhD Dissertation at USP Ribeirão Preto and completes PPCR advanced statistical workshop

**2019**  
Post-Doctoral Researcher at USP, with a period at HGSE, and participant in NCPI’s Executive Leadership Program

**2020-ongoing**  
Professor in the graduate program in Mental Health of USP Ribeirão Preto Medical School and parenting and early childhood specialist at the Maria Cecília Souto Vidigal Foundation



**“At Harvard I had the opportunity to learn from great researchers and to live in a stimulating environment,**

**where our ideas are listened to in a respectful and welcoming way, with guidance and suggestions on how to improve and create projects with real impacts in the world.** There,

*I met amazing projects like Project Zero and ProLEER that broadened my vision of education and literacy, allowing me to meet people from all over the world with their different cultures and unique solutions to specific challenges. I would like to highlight two outstanding phrases for me that summarize what I learned there, one is the motto “Learn to change the world” adopted by the HGSE and the other is the “Usable Knowledge” project that reflect a lot of what I learned at Harvard, the scientific knowledge must serve society. The cultural, linguistic, and thought diversity of Harvard’s students and faculty create a very conducive environment to guide new generations of education leaders around the world. Studying at Harvard allowed me to go far beyond what I had already learned through my Ph.D., expanding my view of the world and my role as a scientist and professor. Knowledge is the only thing that when we divide, we multiply.”*



**RENAN SARGIANI**

Postdoctoral  
Researcher,  
Harvard Graduate  
School of Education

**2016**

Earns Ph.D. in School Psychology and Human Development from the University of São Paulo

**2017**

Presents on “Contributions of early literacy development to brain and cognitive development” at NCPI seminar

**2018**

Post-Doc at HGSE supervised by Catherine Snow as part of Lemann Brazil Research Fund award for project “Improving literacy outcomes in Brazil by expanding teachers’ instructional repertoires”

**2019**

General Coordinator for Cognitive Neuroscience and Linguistics at Brazil’s Ministry of Education

**2020 - ongoing**

Founds the Evidence-Based Education Institute (Instituto Edube), which produces and disseminates research for education policy and practice

## Select Trajectories and Testimonials



***“The Harvard-Brazil ECD initiative is an extraordinary opportunity to bring together and translate research and academic debates on early childhood and children’s rights into the daily life of public, regulatory and judicial policies in Brazil. Both my period of research at Harvard Law School and my activities at the Executive Leadership Program were decisive for the strengthening of my entire advocacy in the Justice System in Brazil. A good example of this was the amicus brief and oral argument we, as Alana Institute, presented before the Brazilian Supreme Court for the freedom and house arrest of women and children, whose historic decision expressly cited the research of Prof. Charles Nelson on toxic stress, impacting thousands of provisionally imprisoned women and children. Still, after a broad mobilization with the highest authorities of the Brazilian Justice, the National Pact for Early Childhood by the National Council of Justice was created, an unprecedented initiative in the country that seeks to train more than 22,000 justice professionals on early childhood and children’s rights, make a diagnosis of the current situation in the courts and propose changes to a more accessible, sensitive and child-friendly justice system, so that we can change the beginning of all children’s stories, changing their whole stories for the better. A revolution for an ethics and economy of care and with absolute priority for children is underway in Brazil.”***



**PEDRO HARTUNG**  
Visiting Researcher,  
Harvard Law  
School

### **2014**

Begins PhD in Human Rights, Public Law and Children’s Rights at University of São Paulo

### **2015**

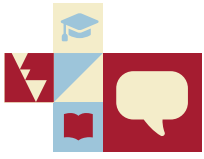
Hosts Ashley Collins (AB ’17) at Instituto Alana for Summer Internship, focused law and advocacy related to advertising directed at children

### **2016-17**

Visiting Researcher under Elizabeth Bartholet at Harvard Law School Graduate Program and Child Advocacy Program

### **2018-ongoing**

Lecturer and Technical Panel Member for NCPI Executive Leadership Program in Early Childhood Development



**“Under the mentorship of Prof. Charles Nelson, I had the unique opportunity to work with cutting-edge cognitive**

**neuroscience research while collaborating with the NCPI to translate scientific findings to media, policy makers, civil society leaders, and beyond.** As a pediatric neurologist in Brazil, I was concerned by the lack of knowledge about early childhood development both in society and in the medical field. During my research fellowship at the Mind, Brain and Education program at HGSE and while participating in the Center of the Developing Child, I pursued multidisciplinary training and had the opportunity to work with a myriad of ECD professionals. This experience was of great value to lead the writing of the first working paper of NCPI, “O Impacto do Desenvolvimento na Primeira Infância sobre a Aprendizagem”. At the Laboratories of Cognitive Neuroscience I received training in functional neuroimaging methods to study the infant’s brain in more natural experimental settings, an emerging area of research in Brazil. Participating in the Harvard-Brazil ECD initiative was a watershed in my career. I was able to build collaborative relationships with key Brazilian researchers and organizations focusing on ECD projects. One of those is Bloom, a health startup supporting parenthood that has already impacted over 30,000 families within the work environment and beyond.”



**JULIANA PORTO**  
Visiting Researcher,  
Harvard Graduate  
School of  
Education and  
Boston Children’s  
Hospital

**2012-13**

Research Scholar under Professor Kurt Fischer at the Harvard Graduate School of Education’s Mind, Brain and Education program.

**2013**

Begins Doctoral program in Neurosciences at PUC Rio Grande do Sul and Researcher fellow position at Boston Children’s Hospital, Laboratories of Cognitive Neuroscience under Professor Charles Nelson.

**2014**

Leads writing of NCPI’s inaugural working paper, “O Impacto do Desenvolvimento na Primeira Infância sobre a Aprendizagem”.

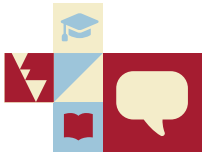
**2016**

Publishes “Behavioral and neural correlates of emotional development: typically developing infants and infants of depressed and/or anxious mothers” with PUC-RS and Harvard advisors.

**2020**

Publishes “The influence of maternal anxiety and depression symptoms on fNIRS brain responses to emotional faces in 5- and 7-month-old infants” in *Infant Behavior and Development*.

## Select Trajectories and Testimonials



***“The nearly four years I spent collaborating with the Harvard-Brazil ECD initiative proved to be pivotal***

***both personally and professionally, and I view this period as one of remarkable growth and learning.*** Some of the most insightful learning opportunities arose from participating within the iLab; the specific innovative and evidence-based methodology provided me with invaluable R&D skills, an enriching learning community, as well as important mindset shifts to think deeply about impact. During my time at NCPI, I also gained hands-on experience working with advocacy and public policymakers, adding an important lens to my work. I’ve carried the skills and lessons to my current role at Porticus- who I connected with via NCPI- and now support organizations tackling systemic issues that impede child learning and development. My time in Brazil allowed me to not only hone my Portuguese, gain experience working internationally, and expand my professional network, but additionally find a community and culture that became my home. The value in this truly cannot be overstated.”



**CHRISTINA KIRBY**

Ed.M '18, Mind,  
Brain and Education,  
Harvard Graduate  
School of Education

### **2017**

Completes Masters  
in Mind, Brain and  
Education at HGSE

### **2017-18**

DRCLAS Brazil  
Office Fellow,  
focused on  
early childhood  
development  
research  
collaborations and  
NCPI innovation and  
leadership agendas

### **2018-20**

NCPI Science and  
Innovation Program  
Officer, leading the  
NCPI iLab portfolio  
and project support

### **2021-ongoing**

Programme  
Manager for  
Education at  
Porticus North  
America, helping  
organizations tackle  
systemic issues  
that impede child  
learning



*"My Fellowship at the DRCLAS Office in 2019-2020 really set the stage for my current dissertation research into parent intervention effectiveness. While working at the Harvard-Brazil Office, I had the opportunity to collaborate with Brazil's lead ECD researchers and practitioners. It is because of those relationships, particularly the relationship I forged with Beatriz Linhares, that I am now including a study in my dissertation that draws on the data Beatriz and her team collected and assesses whether certain parent interactional behaviors, beyond parent sensitivity, predict child self-regulatory outcomes later on.*

***My time working at DRCLAS provided a critical juncture for me to build working relationships with Brazilian researchers with whom I plan to collaborate for years to come."***



## MORGAN HEALY

Ed.M '19,  
International  
Education Policy,  
Harvard Graduate  
School of Education

### 2017

Begins Masters in International Education Policy at HGSE

### 2018

Wins a Fulbright Scholarship to teach English in Belo Horizonte, Minas Gerais and work with education researchers at the UFMG

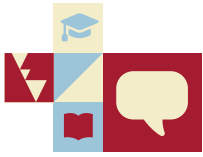
### 2019-20

Completes degree at HGSE and moves to São Paulo for DRCLAS Brazil Office Fellowship focused on early childhood development and education

### 2020-ongoing

PhD Candidate at University of Cambridge Play in Education, Development & Learning (PEDAL) Lab, supported by Gates-Cambridge Scholarship

## Select Trajectories and Testimonials



***“For the past four years, I have collaborated and benefited from the Harvard-Brazil ECD initiative in***

***very significant ways that have shaped my professional, academic and personal path to this day.*** *The connections, made through the initiative and its networks, led me to be a Visiting Fellow at Harvard University in 2019, an important achievement in my academic career. The semester in Cambridge in 2019 solidified the friendships made in Fortaleza, during the Harvard-Brazil Collaborative Field Course, with amazing women from the Harvard Public Health program. The initiative also provided me with incredible and diverse learning opportunities: with leading researchers in Public Health and with incredible young researchers in Fortaleza and with several experts in early childhood development and urban studies at Harvard, in 2017 and in 2019. Finally, the experience of writing the NCPI Working Paper, in collaboration with professor Ciro Biderman, has allowed me to sharpen my skills as a writer and consolidate a lot of my recent studies; it is certainly an important milestone in my professional and academic path. As I approach the end of my PhD program, I hope to continue collaborating and participating in the Harvard-Brazil ECD initiative!”*



**CAMILA SOARES**

Visiting Researcher,  
Department of  
Sociology, Faculty  
of Arts & Sciences

### **2017**

Begins PhD in Public Administration and Government at Fundação Getúlio Vargas (FGV) and participates in NCPI Executive Leadership Program in Early Childhood Development

### **2018**

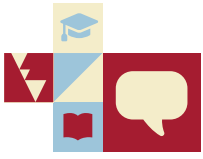
Participates in Early Childhood Development Group at Harvard-Brazil Public Health Collaborative Field Course in Fortaleza

### **2019**

Visiting Fellow under Mario Small in the Department of Sociology, focused on the relationship between neighborhoods and early childhood development

### **2020-ongoing**

Leads the writing of NCPI Working Paper on the importance of neighborhoods for a healthy early childhood development in collaboration with Professor Ciro Biderman



*"I am a Costa Rican nurse and researcher passionate about child development. I think there is still much to do for the children of my country, so I decided to study in Brazil to learn about what is being done in the world to enhance child development. **Being part of Harvard-Brazil ECD initiative through an iLab Project gave me not only the opportunity to improve my skills as a researcher but also to learn about the need of innovative interventions to promote child development.** Additionally, it charted my path to the HGSE, an incredible experience (even though it is virtual). In these few months, I have had the opportunity to participate in enriching discussions with people who are not only world references in child development, but their work has positively impacted the lives of thousands of children in low and- middle income countries, and who are great inspiration for the next generation of global ECD leaders such as Dr. Pia Britto, Dr. Susan Walker, Dr Aisha Yousafzai and Dr. Hiro Yoshikawa. Undoubtedly, the Harvard-Brazil ECD initiative, in addition to positively marking my professional trajectory, will benefit Costa Rican children as all this knowledge and experience will be translated into impactful initiatives regarding child development."*



**KATHERINE  
MARIA SOLIS  
CORDERO**

Visiting Researcher,  
Harvard Graduate  
School of Education

**2018**

Begins PhD Program at the University of São Paulo School of Nursing, focused on monitoring and evaluation of public policies for early childhood development in Brazil and Costa Rica

**2019-20**

Main researcher of NCPI iLab project "BEM Program" (Play Teaches Change): to play in the daily routine to promote child development

**2021**

Visiting Researcher (virtual) at HGSE under supervision of Dana McCoy, parenting programs and caregiver-child interaction measures.



Jack Shonkoff, Director of the Center on the Developing Child, addresses early childhood researchers, policymakers and practitioners in Brazil



# *Informing Policy, Practice and Public Opinion*

From the initiative's outset, Harvard has paired its research, teaching and learning enterprise with deliberate strategies to connect its academic activities with public policy, practice and public opinion in Brazil.



Federal, state and municipal policies and programs, as well as judicial decisions, social ventures and major media programming, have been directly influenced by Harvard's and NCPI's efforts. A few highlights include:

### ↘ **National Legal Framework for Early Childhood (*Marco Legal da Primeira Infância*)**

Members of Congress that participated in the NCPI Executive Leadership Program in Early Childhood Development (ELP) became protagonists in drafting and passing a national legal framework that ensures and delineates fundamental rights to children early in development.

### ↘ **National Happy Child Program (*Criança Feliz*)**

A Brazil-based version of ELP was offered to the professionals responsible for the rollout of a federal home visiting program focused on improving interactions and care with beneficiary families.

### ↘ **State and Municipal-Level Programs and Policies**

ELP also influenced the development or improvement of ECD programs and policies at the state and municipal levels, such as *Primeira Infância Acreana* (AC), *Criança Alagoana* (AL), *Família que Acolhe* (Boa Vista), *Mais Infância Ceará* (CE), *Cresça com seu Filho* (Fortaleza), *Mãe Coruja* (PE), *Política Estadual Integrada pela Primeira Infância* (PI), *Primeira Infância Melhor* (RS) and *São Paulo Carinhosa* (São Paulo capital).

### ↘ **Foster Care Programs**

Professor Charles Nelson and colleagues' research on child development in orphanages versus foster care programs has helped incentivize federal and local governments, including the city of São Paulo, to place fewer children in orphanages and to build publicly financed foster care programs.



***“For over ten years, DRCLAS has played a crucial role in igniting Maria Cecília Souto Vidigal Foundation’s purpose to assure full development to all Brazilian children. The Center connects world-level researchers to the national challenges of early childhood development, providing science-based solutions and innovations that attend to the most urgent demands of vulnerable children and their families. As part of the NCPI coalition, DRCLAS has decisively contributed to establishing the Executive Leadership Program as a national reference for public managers, engaging more than 600 leaders to the early childhood cause.”***

**MARIANA LUZ**

CEO, Fundação Maria Cecília Souto Vidigal

### ↘ Homeschooling Debates

Professor Elizabeth Barthelot invited a coalition of Brazilian civil society leaders and congressional aids to participate in a conference she organized on homeschooling to help inform their arguments against a rapidly moving homeschooling agenda in the Brazilian congress.

### ↘ Alumni Entrepreneurs

Harvard Alumni have launched social ventures on early childhood development in Brazil and benefited from engagement with the initiative. Michael Kapps (AB '12) and Juliano Frohener (LLM '01) created parenting supports through SMS-based technology, for example, while Angela Hernandez (EdM '19) and Elisa Mansur (MPA '20) co-founded Carinos, a digital support network and corporate benefit that helps families with their caregiving needs.



### ↘ Citations in Supreme Court Decisions

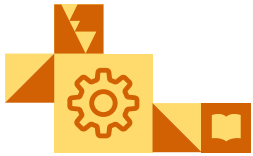
Justice Ricardo Lewandowski decided to free or move to house arrest thousands of provisionally imprisoned women with young children. The amicus brief and oral arguments that based this decision leaned on Professor Charles Nelson's research on the negative impacts of toxic stress on child development.



*“Of the experiences that I am aware of, this might have been the most successful at creating interactions between relevant academic work and that work’s consequences, in terms of economic policies and initiatives that were put into effect and validate the academic work.”*

#### **CLAUDIO HADDAD**

Chair, DRCLAS Brazil Office Advisory Committee



# ***NCPI Executive Leadership Program in Early Childhood Development***

The Executive Leadership Program in Early Childhood Development (ELP) immerses policymakers, public managers and changemakers in the science, economics, and public policy of early childhood development and prepares them to advance ECD agendas in Brazil.

## **COURSE AT HARVARD**

### **📅 1 WEEK**

The program begins with a week at Harvard in which participants learn about ECD through the lenses of neuroscience, psychology, economics, public policy, evaluation, design thinking and leadership. The schedule includes site visits and group work sessions facilitated by Brazilian technical advisors. At end of the week, groups propose an action plan

## **ACTION PLAN DEVELOPMENT**

### **📅 3 MONTHS**

Over the next few months, the action plan groups work with one another and their technical advisers to further develop their plans, which maybe aim to strengthen existing ECD policies and services or to start something new.

## **WORKSHOP**

### **AT INSPER**

### **📅 2 DAYS**

The program concludes with a workshop in São Paulo in which participants dive deeper into the local context in sessions with Brazilian experts, present their action plans and use the feedback from their colleagues for fine-tuning.

**570**

Participants have completed the program,

**500**

of which come from Brazil

**101**

ACTION PLANS were developed through the program



Charles Nelson  
teaching in ELP  
class in São  
Paulo in 2015

Since 2011, NCPI has hosted



**8** International editions and



**2** Brazil-based editions of ELP

And, in partnership with Insper has spun off,

**3**

editions of an online course focused on implementation



challenges and strategies

**11** Harvard Professors have taught in the program

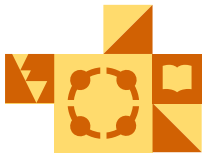


A CASE STUDY THAT DRCLAS WROTE ON ELP WAS PART OF THE HARVARDX COURSE *EARLY CHILDHOOD DEVELOPMENT: GLOBAL STRATEGIES FOR IMPLEMENTATION*

*“The Harvard-Brazil ECD initiative has provided unique opportunities for me from scientific as well as policy impact perspectives. I have taught annually for the Executive Leadership Program, which has proven to be an effective strategy for helping Brazilian leaders advocate for the development of ECD policies and programs in their country. This program has also helped my research collaborators and me build a powerful network that has ultimately enabled us to set up a major, complex research project that would not have otherwise been possible. **Many of the program participants, such as local government authorities, lawyers and judges, and directors of foundations, research institutions and NGOs, are now working with us to comprehensively document and compare the impacts of institutional care and of high-quality foster care on early childhood development in São Paulo.**”*

### CHARLES NELSON

Richard David Scott Chair in Pediatric Developmental Medicine Research, Boston Children’s Hospital; Professor of Pediatrics and Neuroscience and Professor of Psychology, Harvard Medical School; Professor of Education, Harvard Graduate School of Education



# NCPI International Symposium

*The Núcleo Ciência Pela Infância (NCPI) International Symposium convenes professionals from sectors such as health, education, social development and child protection to raise awareness about the importance of evidence-based policies and programs to promote early childhood development. A handful Harvard faculty, as well as alumni, have delivered presentations at the symposium.*



**2011:** [Jack Shonkoff](#), Director of the Center on the Developing Child, at [1st NCPI International Symposium on Early Childhood Development](#)



**2015:** [Ronald Ferguson](#), Faculty Director of the Achievement Gap Initiative, at the [5th NCPI International Symposium on Early Childhood Development](#)



**2016:** [Marcia Castro](#), Andelot Professor of Demography, at the [6th NCPI International Symposium on Early Childhood Development](#)

9



EDITIONS

3



CITIES

>20,000



VIEWERS in-person and online



**2012:** Charles Nelson, Richard David Scott Chair in Pediatric Developmental Medicine Research, at 2nd NCPI International Symposium on Early Childhood Development



**2013:** Jack Shonkoff, Director of the Center on the Developing Child, at 3rd NCPI International Symposium on Early Childhood Development



**2019:** David Williams, Florence Sprague Norman and Laura Smart Norman Professor of Public Health, at the 8th NCPI International Symposium on Early Childhood Development



**2021:** Marcia Castro, Andelot Professor of Demography, at the 9th NCPI International Symposium on Early Childhood Development



# Events Engaging Decision-Makers and Practitioners

*Through the initiative, Harvard Faculty have had the opportunity to share their ECD knowledge through a range of ad-hoc events, many of which have aimed to mobilize Brazilian decision-makers, policymakers and practitioners. The following sample provides a taste of such efforts.*

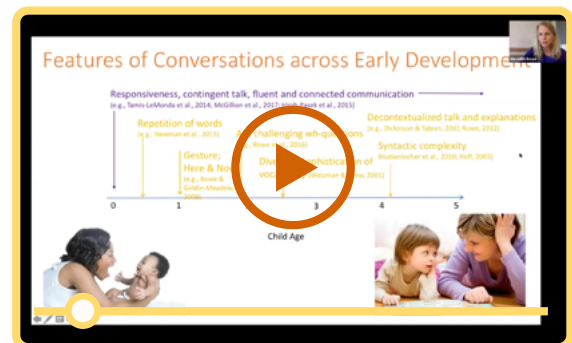


## 2013: Brazil & the 21st Century Symposium at Harvard

A select group of ~50 high-level Brazilian politicians, industry leaders, and social entrepreneurs attended the roundtable “Building Human Capital from the Start: Brazil/Harvard Partnerships” moderated by Harvard’s Vice-Provost of International Affairs and featuring Jack Shonkoff, Wafaie Fawzi and Gigi Luk.



**2019:** Charles Nelson and colleagues discuss foster care vs institutional care at Ministry of Citizenship in Brasília



**2021:** Meredith Rowe and colleagues share what everyone should know about parent-child interactions and language development

**26** ADDITIONAL  
EVENTS  
featuring Harvard Faculty



**2015:** Ronald Ferguson focuses on early childhood in presentation titled “Direito à educação - O desafio da excelência com equidade” at INEP in Brasília.



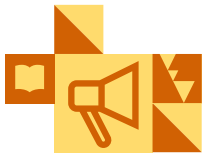
**2020:** Christopher Sudfeld and Hermano Rocha at Fortaleza’s Seminar on Intersectoral Policies for Early Childhood and Youth



**2017:** Catherine Snow and Robert Selman contribute to *Desafios e possibilidades na alfabetização infantil*



**2016:** Marcia Castro organizes “30 Years of Childhood Interventions in Ceará” with First Lady of Ceará, State Secretary of Education and Mayors of Fortaleza and Sobral



# Communications Products and Media Coverage

*The initiative has helped generate a variety of communication products, including videos, press coverage, interviews and research summaries.*

>80



COMMUNICATIONS PRODUCTS

## ADAPTATIONS OF HCDC PRODUCTS

One of the ways that the Center on the Developing Child at Harvard University has helped advance the field is in communicating the science of child development through a variety of short, easily understood media products. The short videos below were highly effective tools for raising awareness in Brazil about how critical the early childhood years truly are to lifelong development. Participants in ELP, for example, would often show these videos to their local constituencies after returning from Harvard.



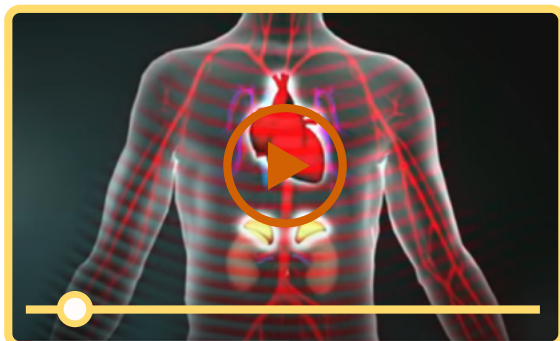
**Super-Cérebro** is the Portuguese translation of Brain Hero, a three-minute video depicting how actions by a range of people in the family and community can affect a child's development



**As Experiências Moldam a Arquitetura do Cérebro** is the Portuguese translation of [Experiences Build Brain Architecture](#)



**O Jogo de Ação e Reação Modela os Circuitos do Cérebro** is the Portuguese translation of [Serve & Return Interaction Shapes Brain Circuitry](#)



**O Stress Tóxico Prejudica o Desenvolvimento Saudável** is the Portuguese translation of [Toxic Stress Derails Healthy Development](#)



**Construir as Competências dos Adultos para Melhorar o Desempenho das Crianças: Uma Teoria de Mudança** is the Portuguese translation of [Building Adult Capabilities to Improve Child Outcomes: A Theory of Change](#)



FULL LIBRARY OF VIDEOS DEVELOPED BY THE CENTER ON THE DEVELOPING CHILD AT HARVARD UNIVERSITY THAT HAVE BEEN ADAPTED TO BRAZILIAN PORTUGUESE

### FROM COMEÇO DA VIDA

Professors Jack Schonkoff and Charles Nelson were featured in “The Beginning of Life” documentary and series, produced by Maria Farinha Filmes with the support of Maria Cecília Souto Vidigal Foundation, Bernard van Leer Foundation, Alana Institute and UNICEF.



O Começo da Vida (Beginning of Life)



O Começo da Vida (Beginning of Life) - Estresse Tóxico



O Começo da Vida (Beginning of Life) - O caso dos órfãos da Romênia

## ADDITIONAL VIDEOS

Harvard researchers and staff have contributed to an initiative overview video, a short documentary, an expert interview and an online lecture, among other videos.



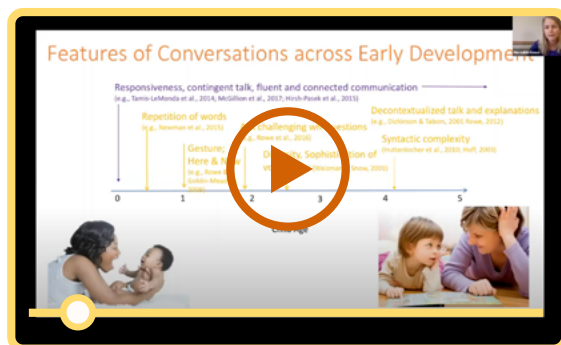
[Initiative Overview Video - 2016](#)



[Daddy's Embrace](#)



["David R. Williams - Ambiente favorável à equidade e a perspectiva da epigenética" \(FMCSV\)](#)



[Language Development and Parent-Child Interactions: Meredith Rowe](#)

### **NEXO POLÍTICAS PÚBLICAS**

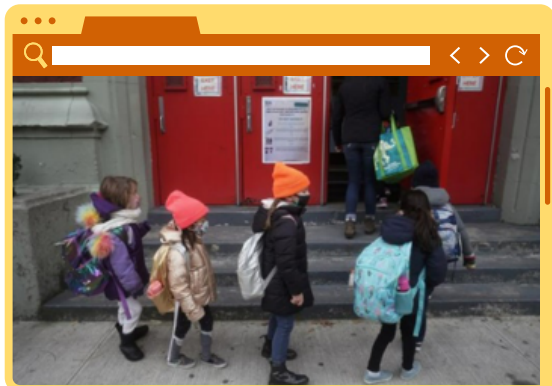
DRCLAS's partnership with Nexo Políticas Públicas provides a platform for Harvard experts to disseminate their ECD research and knowledge through a variety of innovative formats, helping to bridge the initiative with Brazilian society.



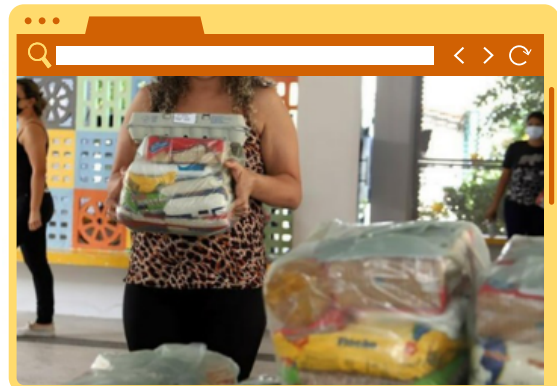
O que afeta o desenvolvimento da linguagem das crianças segundo estudos



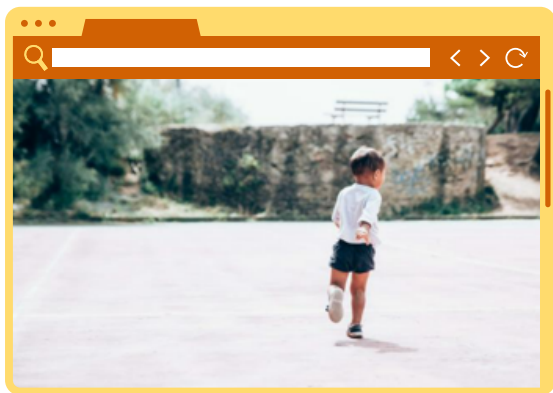
Qual o impacto de experiências adversas para o desenvolvimento infantil



Lições do Furacão Katrina: como a pandemia pode afetar crianças



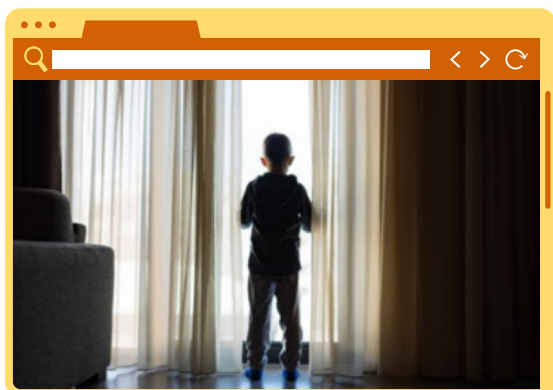
Como a pandemia aumentou a insegurança alimentar no Ceará



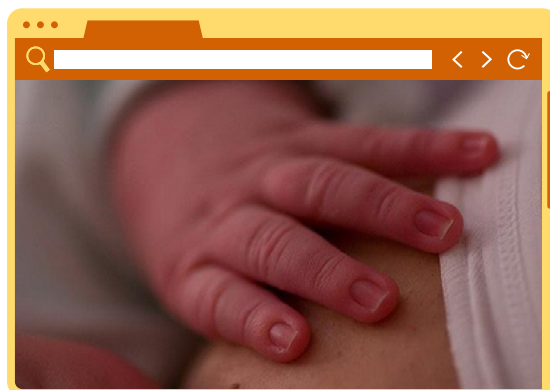
5 pontos sobre os benefícios para a primeira infância do controle emocional dos pais



Como o castigo corporal pode afetar o desenvolvimento cerebral infantil



5 pontos que a ciência explicou sobre os impactos do castigo corporal em crianças



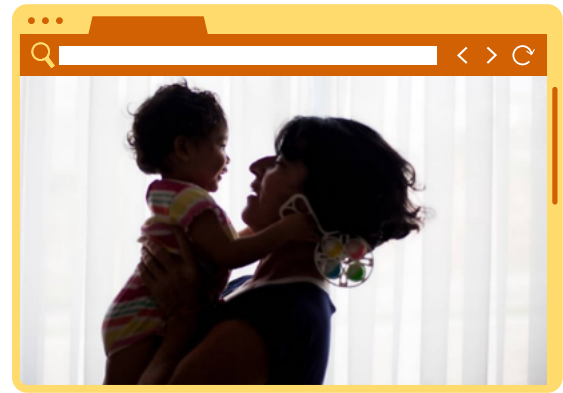
Como o desenvolvimento infantil é impactado pela desnutrição e aleitamento materno

### **BRAZILIAN MEDIA HIGHLIGHTS**

The initiative has helped increase the attention that journalists give to ECD in Brazil, and consequently, the amount of reliable scientific information on ECD that reaches the Brazilian population.



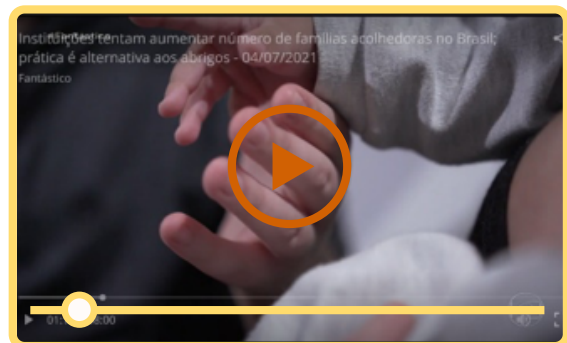
A nova fronteira da educação infantil  
**Capa Exame**



Manter crianças em abrigos, como faz Brasil, prejudica desenvolvimento  
**Folha de São Paulo**



4 a cada 10 grávidas em Fortaleza têm sinais de transtorno mental na pandemia, aponta estudo  
**Diário do Nordeste**

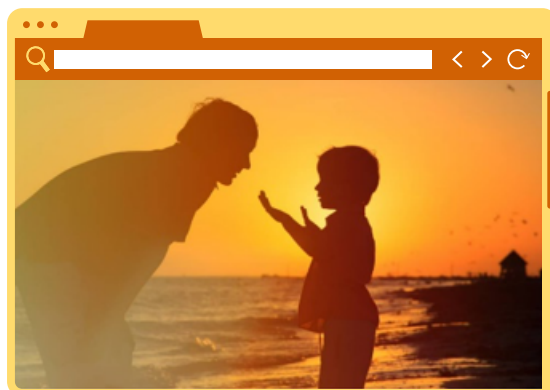


Instituições tentam aumentar número de famílias acolhedoras no Brasil; prática é alternativa aos abrigos  
**Fantástico**

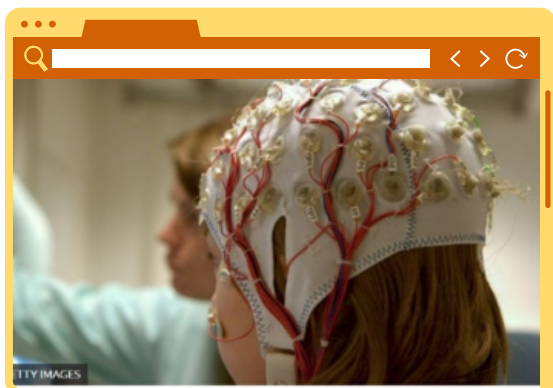
Harvard ECD experts have been featured in over **45** pieces published by Brazilian magazines, newspapers, and TV programs.



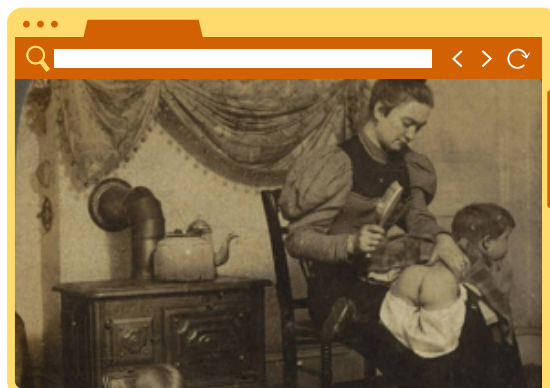
“As crianças não tinham quem as amasse”  
**Isto É**



Boas conversas são fundamentais para o cérebro das crianças  
**O Globo**



Autismo: as descobertas recentes que ajudam a derrubar mitos sobre o transtorno  
**BBC News Brasil**



Palmadas comprometem desenvolvimento cerebral de crianças, mostra estudo  
**Folha de São Paulo**



Ely Harasawa, National Secretary for Early Childhood Attention and former Program Manager at the Maria Cecília Souto Vidigal Foundation, hugs Executive Leadership Program participant

# Acknowledgements

## HARVARD INTER-CENTER PARTNERSHIP

DRCLAS's initiative on early childhood development in Brazil was born and raised in partnership with the Center on the Developing Child at Harvard University (HCDC). HCDC's thought leadership and collaborative spirit have created the favorable conditions that enabled DRCLAS to focus on this important topic.

## BRAZILIAN INSTITUTIONAL PARTNERS

Without the initial and ongoing partnership of Maria Cecília Souto Vidigal Foundation (FMCSV), Harvard's engagement with early childhood development in Brazil could never have reached a comparable level of impact. FMCSV's local leadership, extensive expertise, and significant investment of time and resources have ensured the stability and relevance of DRCLAS's efforts.

Inspere and the University of São Paulo Medical School (FMUSP) have provided the academic excellence and infrastructure from which the Núcleo Ciência Pela Infância (NCPI) and several key research, teaching and exchange projects could be built. Instituto PENSI bolstered NCPI's scientific expertise in its critical second phase and plays a pivotal role in the major Early Institutionalization Impact Intervention (EI-3) project.

The Bernard van Leer Foundation (BvL) and Porticus have strengthened NCPI even further, contributing complementary intellectual, information and financial resources.

## FUNDING OF THE INITIATIVE



Funding for Harvard's ongoing collaborative initiative on early childhood development in Brazil has been generously provided by the Maria Cecília Souto Vidigal Foundation, Lemann Foundation, Haddad Foundation, José Luiz Egydio Setubal Foundation, Bernard van Leer Foundation and Porticus.

## FUNDING OF PROJECTS AND EXCHANGE



An array of organizations internal and external to Harvard have provided funding to specific early childhood development research or exchange opportunities. In the annex of this report, we recognize the financial supporters of specific Harvard-Brazil collaborative research projects.

## DRCLAS BRAZIL OFFICE



The entire Brazil Office team has contributed to this initiative's success. In particular, past and current staff members Jason Dyett, Tomás Amorim, Tim Linden, Helena Monteiro and Larissa Leal have played pivotal roles over the last decade.

### IN MEMORIUM

Anna Maria Chiesa, Professor of Nursing at the University of São Paulo, passed away in May 2022. A tireless and inspiring champion of early childhood, Anna's expertise, passion, wisdom and dedication contributed immeasurably to NCPI and to several other facets of the Harvard-Brazil ECD initiative.





# ***Annex: Collaborative Research by Project***

 2013 - ongoing

Disease Burden and Early Childhood Development: A Birth Cohort Study in the Brazilian Amazon (MINA Brazil) [↗](#)

 2016 - 2020

Caregiver Reported Early Childhood Development Instruments (CREDI): Validation for Brazil [↗](#)

 2013 - ongoing

Early Life Adversity and Child Development: Evidence from the Western Region Project (Western Region Birth Cohort) [↗](#)

 2016 - ongoing

Brain Games: A Crèches-Based Early Intervention Program to Improve Children's Executive Function and Self-control Skills in Brazil [↗](#)

 2013 - 2016

Executive Functions and Early Cognitive Development of Low-Income Children in Salvador Bahia, Brazil [↗](#)

 2017 - ongoing

Early Literacy Prediction and Reading Intervention for Preschoolers From Low-Income Families [↗](#)

 2013 - 2014

Number and Counting in Indigenous Communities in Brazil [↗](#)

 2017 - ongoing

Maternal and infant health in Southern Brazilian cities: a cohort study [↗](#)

 2015 - ongoing

The Effects on Early Brain Development of a Nurse Home Visitation Program for Pregnant Youth and their Families Living in a Poor Urban Area [↗](#)

 2018 - ongoing

SEL Kernels for Brazil ECE - A Low-Cost, Evidence-Based, and Scalable Approach to Social and Emotional Learning (SEL) in Brazilian Early Childhood Settings [↗](#)

 2018 – ongoing

Early Institutionalization Intervention Impact Project (Ei-3) [↗](#)

 2018 – ongoing

Parent-Child Interaction and Child Language Development in Low-income Families in Brazil [↗](#)

 2018 – ongoing

Preschool Intervention in Brazil to Enhance Poor Children’s School Readiness [↗](#)

 2019 – ongoing

Population-Based Studies on Maternal Health and Child Development [↗](#)

 2020 – ongoing


An Evidence Game-Based Intervention to Enhance Social-Emotional Skills in Context of Adversity in Brazil: A Comprehensive Approach for Typical Children and Children with Autism [↗](#)

 2020 – ongoing

The Development, Implementation, and Evaluation of an Early Language Development Parenting Program for Social Assistance Community Centers in Brazil [↗](#)

 2020 – ongoing

IRACEMA-COVID [↗](#)

 2020 – ongoing

Examining the Effects Of Covid19 Restrictions on Literacy Practices in a Child’s Home: A Global Survey Study [↗](#)

 2021 – ongoing

Optimal Design of Digital Early Childhood Development Interventions: A Multifactorial Randomized Control Trial [↗](#)

## ***Disease Burden and Early Childhood Development: A Birth Cohort Study in the Brazilian Amazon (MINA-Brazil)***

### **MAIN RESEARCHERS**

Marcia Castro (HSPH); Marly Augusto Cardoso (USP/HSPH Visiting Researcher); Wafaie Fawzi (HSPH); Marcelo Urbano Ferreira (USP); Alicia Matijasevich (USP); Paulo Neves (USP/HSPH Visiting PhD Student ); Barbara Hatzlhofer Lourenco (USP/Fulbright Fellow at HSPH); Paola Soledad Mosquera (USP PhD Student); Ana Alice de Araújo Damasceno (Federal University of Acre); Rodrigo Medeiros de Souza (Federal University of Acre).



**2013 – ONGOING**



### **LOCATION:**

Cruzeiro do Sul, Acre



### **FINANCIAL SUPPORT:**

DRCLAS Brazil Office (FMCSV), CNPq, FMCSV, FAPESP



PROJETO  
**mina**  
saúde e nutrição  
materno-infantil  
em cruzeiro do sul, acre

### **OVERVIEW**

The initial project awarded by DRCLAS Brazil Office (thanks to FMCSV's support) aimed to (i) set up the first longitudinal, population-based birth cohort study in the Brazilian Amazon, followed up for at least five years; (ii) collect prospective information on maternal, environmental, societal, and genetic factors; and (iii) answer a variety of questions addressing malaria biology/immunology, disease burden, and child development. The birth cohort was established as the Maternal and Child Health and Nutrition in Acre, Brazil (MINA-Brazil) project, which studies the effects of early environmental exposures and maternal lifestyle choices on growth and development of the Amazonian children. MINA-Brazil has since been awarded support from several research funding sources.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

📌 “The Maternal and Child Health and Nutrition in Acre, Brazil birth cohort is the first population-based study with longitudinally collected biospecimens (plasma, serum and extracted DNA from blood and faeces) and measurements carried out in the Amazon.” [Link](#)

↘ “The adverse health effects of Plasmodium vivax malaria in early childhood—traditionally viewed as a benign infection—remain largely neglected in relatively low-endemicity settings across the Amazon. In the MINA-Brazil cohort study, antenatal infection increases the risk of vivax malaria in the offspring and repeated childhood P. vivax infections are associated with anemia at the age of 2 years.” [Link](#)

↘ “This study aimed to assess agreement between antenatal estimates of gestational age by ultrasound and clinical records at birth in the Brazilian Amazon. In conclusion, high-quality ultrasound images from the second trimester of pregnancy based the assessment of gestational age, while reliability of last menstrual period was limited. Information from clinical records at birth presented an acceptable agreement on average and for classification of preterm births, which is relevant for properly interpreting perinatal outcomes.” [Link](#)

↘ “Our findings further challenge the common notion that vivax malaria during pregnancy, contrary to falciparum malaria, is a relatively benign health condition in low-endemicity countries. Antenatal malaria infections in the third trimester of pregnancy are associated with significant fetal growth impairment and lower maternal hemoglobin levels at delivery... These results call for improved strategies for [malaria in pregnancy] prevention in areas where intermittent preventive treatment is not feasible.” [Link](#)

↘ “Poor serum retinol status throughout pregnancy was associated with maternal anemia at delivery in Amazonian women. The current World Health Organization protocols for supplementation during antenatal care should consider [vitamin A] status for planning recommendations in different scenarios.” [Link](#)

↘ “Insufficient weekly gestational weight gain was associated with the risk of vitamin A insufficiency. Excessive weight gain, in turn, was associated with higher blood pressure values at the beginning of the third gestational trimester.” [Link](#)

↘ “These results highlight that [exclusive breast feeding] among children in the Brazilian Amazon is considerably below international recommendations, and indicate the immediate need to plan and implement actions to promote and support breastfeeding early in life.” [Link](#)

↘ “Factors associated with preterm birth in the Western Brazilian Amazon were mostly related to the aspects of health care provided to women, and thus could be prevented. Proper, timely, and regular antenatal care visits can help reduce adverse outcomes, such as hypertension and bleeding.” [Link](#)

↘ “Breastfeeding cessation in the study area occurred much earlier than the recommended 2 years of age. Factors associated with ending breastfeeding early included ever-use of a bottle, having a single mother, and belonging to the second-poorest wealth quartile.” [Link](#)

## ***Early Life Adversity and Child Development: Evidence from the Western Region Project (Western Region Birth Cohort)***

### **MAIN RESEARCHERS**

Alexandra Brentani (FMUSP); Günther Fink (HSPH, now Swiss Tropical and Public Health Institute); Sandra Grisi (FMUSP); Cindy Liu (HMS); Katherine Andrews (HSPH); Dana McCoy (HGSE); Helena Brentani (FMUSP); Marta Dormal (HGSE); Jorge Curtas (HGSE)



**2013 – ONGOING**



### **LOCATION:**

São Paulo, São Paulo



### **FINANCIAL SUPPORT:**

DRCLAS Brazil Office (FMCSV), FAPESP, FMCSV, DRCLAS Cambridge, Secretaria Estadual da Saúde do Estado de São Paulo (SESSP), Saving Brains/Grand Challenges Canada

### **OVERVIEW**

Günther Fink and Alexandra Brentani met at the Center on the Developing Child in 2011. Before long Alexandra was working directly with Günther as a Visiting Scholar hosted by the Center on the Developing Child, and the two were awarded collaborative research funds from DRCLAS for a project that aimed at assessing the developmental impact of early life adversity among 1200 children born in São Paulo's Western Region in 2012. Günther continued working with Alexandra and colleagues on the Western Region Birth Cohort and were awarded several larger research grants to study the impact of toxic stress on child development and interventions in the region, and afterwards in Boa Vista, Roraima. Günther has since moved to the Swiss Tropical and Public Health Institute, but the research group has remained intact and has developed several lines of research that have stemmed from the initial connection facilitated by Harvard.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

▾ Publication detailing the Cohort Profile.

[🔗 Link](#)

▾ “Initial findings have shown a negative association between prematurity and being small for gestational age and physical development at 12 months, with important sex differences in infants' ability to cope with adversity.” [🔗 Link](#)

▾ “We have also found important gender differences in DNA methylation, highlighting early life adaptations that can be critical for later life growth and development.” [🔗 Link](#)

↘ “Associations between maternal and child hair cortisol were found during the first year after birth.” [Link](#)

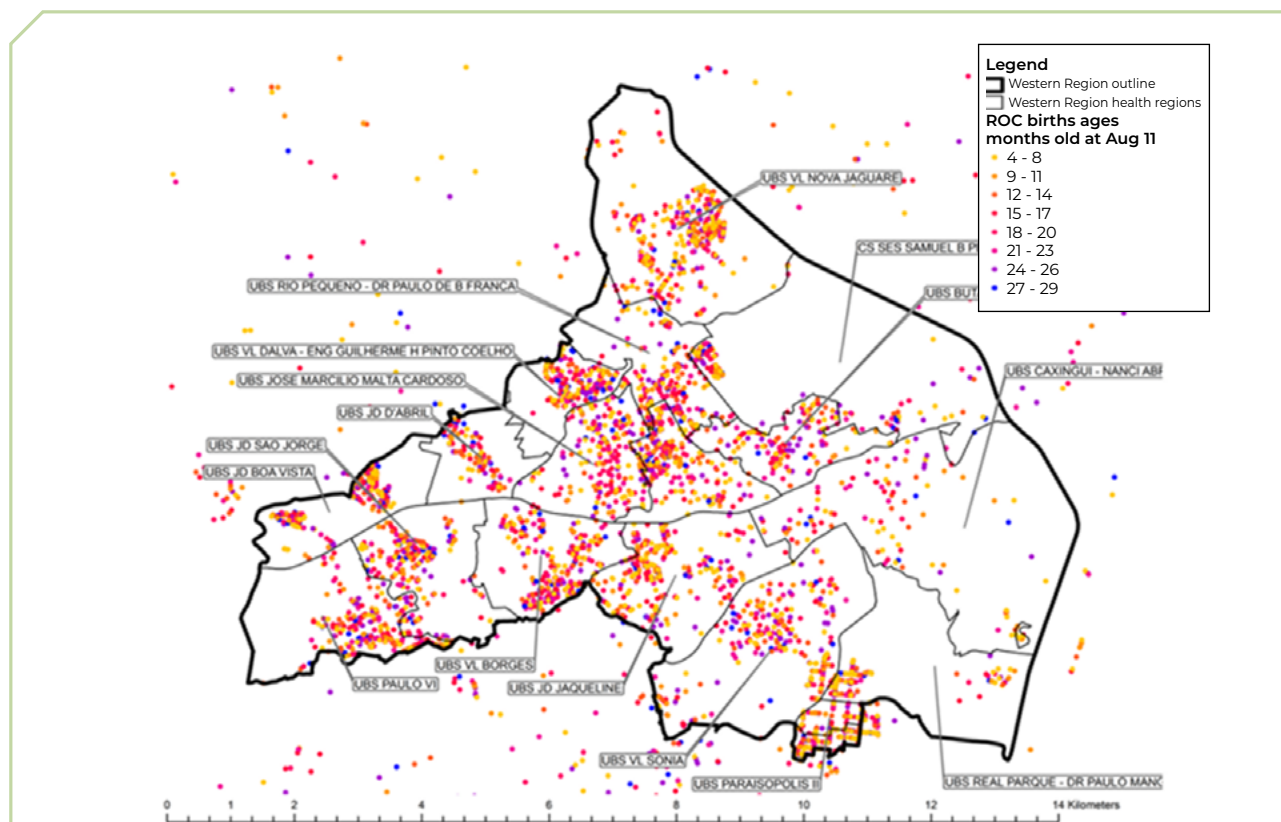
↘ The researchers adapted the evidence-based ECD home visit program developed in Jamaica to the Brazilian context, providing evidence that such programs are feasible and effective for our children. [Link](#)

↘ Using data on child development measured at 12 months, the researchers also analyzed the relationship between breastfeeding and child growth and development, corroborating WHO’s breastfeeding guidelines importance, even in settings where access to complementary food is not limited.” [Link](#)

↘ Kathryn Andrews defends her doctoral dissertation at HSPH, which includes a paper on research in São Paulo. [Link](#)

↘ Using child development data at three years, HGSE doctoral students Marta Dormal and Jorge Cuartas worked with Dana McCoy to identify impacts of community violence exposure on children’s behavior, self-regulation, and development.

↘ With support from the Maria Cecília Souto Vidigal Foundation and Grand Challenges Canada, Alexandra Brentani and Günther Fink expand their collaborative research operations to Boa Vista, Roraima to help generate “evidence urgently needed for guiding Brazil’s national Criança Feliz program as well as similar efforts in other countries.” [Link](#)



## ***Executive Functions and Early Cognitive Development of Low-Income Children in Salvador Bahia, Brazil***

### **MAIN RESEARCHERS**

Charles A. Nelson (HMS/HGSE/HSPH); Rita de Cassia Saldanha de Lucena (UFBA); Gigi Luk (McGill, former HGSE); Juliana Porto (PUC-RS, former HGSE/HMS Visiting Researcher); Fernanda Q. Campbell (Brandeis, former UFBA); Chrissie F. Carvalho (UFSC, former UFBA); Oscar Barbarin (UMD, former Tulane); Pratima Patil (BU Wheelock, former HGSE/HSPH); Johanna Bick (UH, former HMS)



**2013 – 2016**



**LOCATION:**  
Salvador, Bahia



**FINANCIAL SUPPORT:**  
DRCLAS Brazil Office (FMCSV)

### **OVERVIEW**

The project enrolled seventy-five (75) children (5-11 year olds) from impoverished families that live in a favela (slum). Approximately 90% of subjects are black or mixed race. For most families, the monthly household income falls far below the delineation for Brazil's lowest income quintile. The study specifically aimed to establish baseline metrics of global cognitive ability, language ability, and executive functions (working memory, spatial planning, and attention shifting) for underprivileged children in Northeast Brazil.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

✎ In previous Cambridge Automated Neuropsychological Test and Battery (CANTAB), assessments, middle-class Brazilian children performed comparably to established norms (Roque, Teixeira, Zachi, & Ventura, 2011). In comparison, this study found that in two executive function tasks (visual planning and working memory) underprivileged children in Salvador performed worse than age-matched norms, suggesting that the constellation of exposure these children experience in settings of extreme poverty had a negative impact on their executive functions.

✎ Since this is an extremely underprivileged population, Dr. Rita Lucena conducted full neurological exams of students. A number of students were found to have undiagnosed or untreated syndromes or disorders, such as epilepsy, ADHD, sleep disorders, and severe developmental delays. The research staff worked with these children's parents to refer them to specialists and treatment.

The study promoted research capacity building for students trained and aiding in data collection. These students included five students of psychology and speech and language pathology and three medical students.

➤ The study increased the interest and value of research among the partner school's administrators, teachers, and families as observed through their cooperation, questions, and support.

➤ Dr. Chrissie Carvalho offered to the school an intervention to improve executive functions abilities, at the end of this baseline study. In 2016, seventeen children participated in a 4-month intervention using the program "Heroes of the Mind", developed by Dr. Carvalho and her research team.

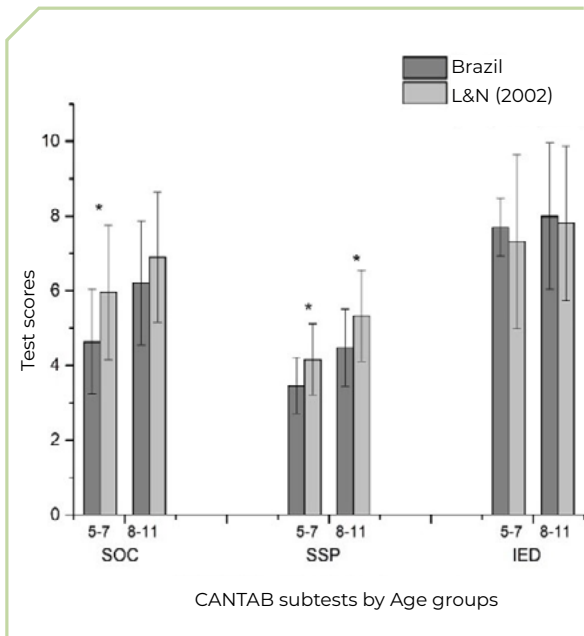


TABLE 2  
CHARACTERISTICS OF CAMBRIDGE AUTOMATED NEUROPSYCHOLOGICAL TEST AND BATTERY (CANTAB)  
SUBTEST PERFORMANCE BY AGE GROUP

	AGE (YEARS)			
	5-7		8-10	
	BRAZIL SAMPLE	LUCIANA & NELSON (2002)	BRAZIL SAMPLE	LUCIANA & NELSON (2002)
<b>STOCKINGS OF CAMBRIDGE (NUMBER OF PERFECT SOLUTIONS)</b>				
N	33	96	42	94
POOLED MEAN	4.64	5.96	6.21	6.90
POOLED SD	1.39	1.79	1.66	1.74
T-TEST	3.849		2.148	
P-VALUE	.0002*		.0033	
<b>SPATIAL SPAN</b>				
N	30	159	42	114
POOLED MEAN	3.46	4.16	4.47	5.33
POOLED SD	.75	.96	1.04	1.22
T-TEST	3.741		9.37	
P-VALUE	.0002*		.0001*	
<b>ID/ED SET SHIFT (STAGE REACHED)</b>				
N	33	143	42	112
POOLED MEAN	7.70	7.32	8.00	7.81
POOLED SD	.79	2.32	.96	2.07
T-TEST	.924		.5623	
P-VALUE	.3566		.5747	
NOTE. ID/ED = INTRADIMENSIONAL/EXTRADIMENSIONAL. SD = STANDARD DEVIATION				
*SIGNIFICANT AT THE .008 LEVEL AFTER BONFERRONI CORRECTIONS FOR MULTIPLE COMPARISONS.				

## ***Number and Counting in Indigenous Communities in Brazil***

### **MAIN RESEARCHERS**

Jesse Snedeker (FAS); Suzi Oliveira de Lima (University of Toronto, former UFRJ); Gennaro Chierchia (FAS); Peggy Li (FAS); Elizabeth S. Spelke (FAS)



**2013 –  
2014**



### **LOCATION:**

Xingu Indigenous Territory,  
Mato Grosso



### **FINANCIAL SUPPORT:**

DRCLAS Brazil Office (FMCSV)

### **OVERVIEW**

This project investigates the acquisition of number words by Brazilian indigenous children (Yudja), and how it affects their understanding of number concepts, exact numerosities and counting. Yudja numerals are restricted to twenty number words that are very complex morphologically. Furthermore, Yudja children are exposed to two number word systems that are morphologically distinct (Yudja and Brazilian Portuguese). Therefore, the researchers ask whether those factors influence Yudja's children counting abilities and their development of number concepts, especially exact quantities, which connects to a broader question of whether the development of numerical knowledge depends on language and cultural factors.

Through experimental fieldwork the researchers specifically investigate: 1) Will the fact that children are not initially presented to a counting list when learning Yudja numerals affect the rate of acquisition of these words? Are there delays in learning number words if children are not exposed to a verbal counting list?; 2) Which numerical system is learned first? The morphologically simpler one (BP) or the one that is more transparent as of indicating the logic of counting, but morphologically more complex (Yudja)?; and 3) Does mastering the logic of counting in a language make it easier to a child to master the logic of counting in another language?

## SELECT FINDINGS, OUTCOMES AND IMPACTS:

↳ The results of this project suggest that:
 

- ↳ Children master the logic of counting first in a numeral system in which they count more fluently than in one with morphological transparency.

↳ Learning counting helps acquisition of exact meanings of number words for large set sizes.

↳ Mastering the logic of counting first in a numeral system (Brazilian Portuguese) facilitates the acquisition process in a second system (Yudja).

↳ Theoretical contributions to linguistics: In this project the team also explored the interpretation of object denoting nouns in Yudja and advanced with the description of the interpretation of such nouns in counting contexts

↳ *Acquiring the Denotation of Object Denoting Nouns* (Language Acquisition at the Interfaces: Proceedings of GALA 2015)

↳ The researchers presented on the project at conferences in Nantes (France), Pará (Brazil), California and Boston (USA), and invited talks in Jerusalem and Tel Aviv (Israel), Toronto (Canada), Düsseldorf (Germany).

↳ The project enabled Suzi Lima to undertake a Post-Doctoral Fellowship at the Harvard Laboratory for Developmental Studies (Jesse Snedeker Lab) and serve as a Teaching Fellow for the course Psychology of Language (Psych 1605), taught by Jesse Snedeker e Gennaro Chierchia.

↳ In 2020, Suzi Lima was awarded The Canadian Linguistic Association’s inaugural Early Career Researcher Award thanks to her “distinction in a range of areas, including theoretical, experimental, and documentation linguistics, while also demonstrating innovation in teaching and community outreach.” [Link](#)

GIVE-A-NUMBER TASK

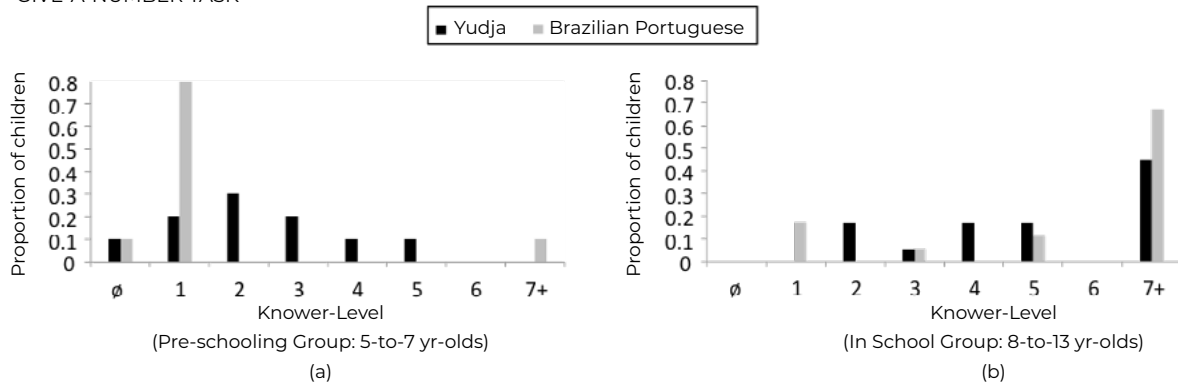


FIGURE 1. RESULTS OF THE GIVE-A-NUMBER TASK. DISTRIBUTION OF CHILDREN’S KNOWER-LEVELS IN YUDJA AND BRAZILIAN PORTUGUESE FOR (A) PRE-SCHOOLING AND (B) IN-SCHOOL CHILDREN.

## ***The Effects on Early Brain Development of a Nurse Home Visitation Program for Pregnant Youth and their Families Living in a Poor Urban Area***

### **MAIN RESEARCHERS**

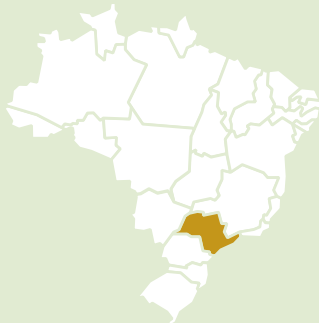
Charles Nelson (HMS, HGSE); Guilherme Polanczyk; Fernanda Alarcão; Renata Amável; Adriana Argeu; Daniel Fatoria; Larissa Rezende Mauro; Mauro Medeiros Filho; Marcelo Hoextera; Anna Chiesa; Lislaine A. Fracolli; Helena Brentani; Alexandre Ferraro; Euripedes Miguel (FMUSP); Elizabeth Shephard (King's College London)



**2015 –  
ONGOING**



**LOCATION:**  
São Paulo



### **FINANCIAL SUPPORT:**

São Paulo Research Foundation (FAPESP); Grand Challenges Canada; Fundação Maria Cecília Souto Vidigal; Bill & Melinda Gates Foundation; CNPq; Companhia Brasileira de Metalurgia e Mineração

### **OVERVIEW**

“Through a randomized controlled trial, the project tests intensive nurse home visitation program for first-time pregnant youth living in poor urban areas from between 8 and 16 weeks pregnancy until the baby is six-months old. The program is inspired by two, well-studied interventions (Nurse Family Partnership and Minding the Baby) but was tailored to the socio-cultural aspects and to the health system organization of a developing country. The project further innovates by focusing on the biological underpinnings of the positive environmental stimuli promoted by the intervention by measuring repeatedly neurophysiological indicators of brain maturation, which has not been done previously in the field.”

[Link](#)

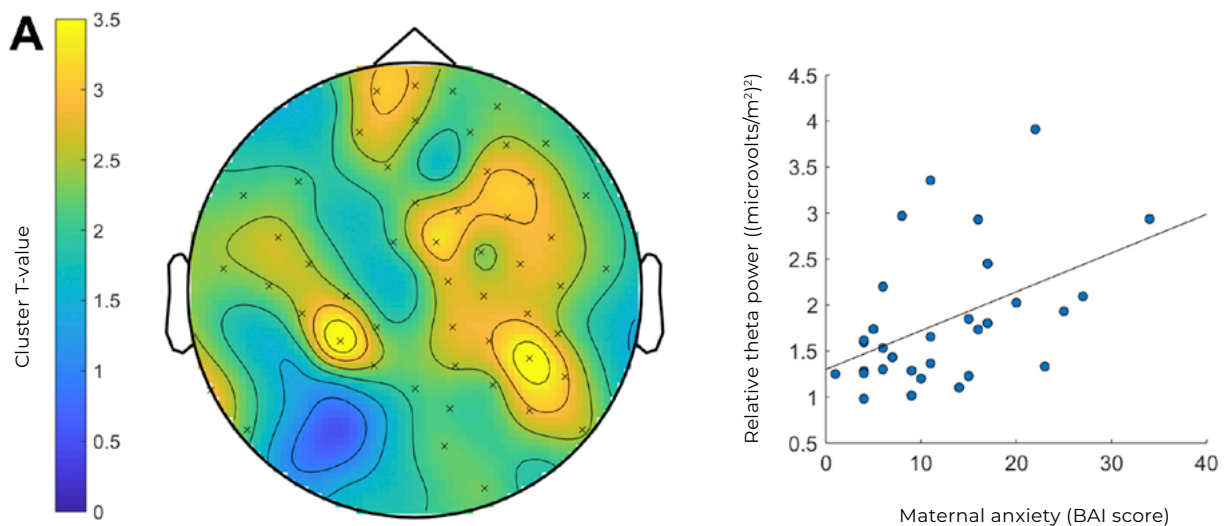
### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

“This study is the first to demonstrate that a HVP [Home Visiting Program] grounded in attachment theory can enhance the early development of attachment in infants of adolescent mothers living in poverty in Brazil. Furthermore, our findings suggest that earlier-life enhancements in neural circuitry involved in social processing may contribute to improvements in infant attachment development. Our findings indicate that HVPs could be important tools for improving early socio-emotional development of vulnerable infants in low-resource countries.” [Link](#)

↘ “This pilot study provides the first evidence from developing countries that maternal psychopathology and low maternal education are associated with alterations in oscillatory neural activity in infants of adolescent mothers. These findings could be used to tailor appropriate interventions and to support public policies aimed at alleviating social disadvantages in vulnerable groups.”

[Link](#)

↘ Importantly, this project facilitated the transfer of research technology, specifically the use of electroencephalogram (EEG) brain measures, from the Laboratories of Cognitive Neurosciences at Boston Children’s Hospital to the University of São Paulo Medical School, who had yet to use such tools of ECD research.



FIGURES ABOVE: ASSOCIATIONS BETWEEN INFANT RELATIVE POWER AND MATERNAL ANXIETY. TOPOGRAPHICAL PLOT (LEFT) SHOWS THE CLUSTERS OF ELECTRODES (INDICATED BY × SIGNS) AT WHICH INFANTS’ RELATIVE OSCILLATORY POWER IN THE THETA FREQUENCY WAS SIGNIFICANTLY POSITIVELY ASSOCIATED WITH MATERNAL ANXIETY. COLOR BARS REPRESENT THE STATISTICAL STRENGTH (T VALUE) OF THE ASSOCIATION BETWEEN OSCILLATORY POWER AT DIFFERENT SCALP REGIONS AND MATERNAL ANXIETY, WITH HIGHER T VALUES REFLECTING A STRONGER STATISTICAL ASSOCIATION. SCATTERPLOT (RIGHT) DISPLAYS THE POSITIVE ASSOCIATIONS BETWEEN ABSOLUTE THETA POWER IN THE SIGNIFICANT CLUSTER AND MATERNAL ANXIETY. BAI, BECK ANXIETY INVENTORY.

## ***Caregiver Reported Early Childhood Development Instrument (CREDI): Validation for Brazil***

### **MAIN RESEARCHERS**

Dana McCoy (HGSE); Elisa Altafim (USP); Alexandra Valéria Maria Brentani (FMUSP); Sandra J.F.E. Grisi (FMSUP); Ana Maria de Ulhôa Escobar (FMUSP); Günther Fink (Swiss Tropical and Public Health Institute).

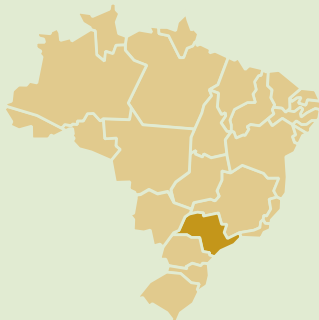


**2016 –  
2020**



### **LOCATION:**

São Paulo (in-person) and throughout Brazil (online)



### **FINANCIAL SUPPORT:**

Saving Brains Program from Grand Challenges Canada

### **OVERVIEW**

While several measures of early childhood development (ECD) status have been developed for large-scale use, no measures of population-level ECD have been validated specifically for children ages 0 to 3 across developing countries, making cross-national comparisons of developmental status and progress for the youngest children impossible. The Caregiver Reported Early Childhood Development Instrument (CREDI) addresses this gap by providing the first population-level measure of ECD for children from birth to age three, focusing on four primary domains: motor, cognitive, language, and social-emotional development. The CREDI includes a Short Form for use in global monitoring, as well as a Long Form for use in international ECD research. (CREDI materials, including a material overview and flow chart, are available on the SEED Lab website). [Link](#)

This project set out to analyze the psychometric properties and general validity of CREDI short form for the population-level assessment of ECD in Brazil.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

Excerpts from [Measuring early childhood development in Brazil: validation of the Caregiver Reported Early Development Instruments \(CREDI\)](#) (Jornal de Pediatria, 2020):

- “This study examined the acceptability, test-retest reliability, internal consistency and discriminant validity of the CREDI short-form tool in a sample of 1,265 Brazilian caregivers of children

from 0 to 35 months (678 of which comprising an in-person sample and 587 an online sample)."

- "The results of the present study suggest the CREDI short-form's validity, reliability, and acceptability as a measure of ECD within Brazil. These findings encourage the use of this instrument for large-scale surveys and monitoring efforts of early developmental outcomes in Brazilian children under the age of 3."
- "CREDI scores in the in-person sample of children aged 2-3 years also showed adequate concurrent criterion validity with the PRIDI, which uses direct observation of the child to assess early development. These results suggest that caregivers' reports using a shorter instrument correspond well to a similar population-level assessment from Latin America that uses a more detailed format."
- "Importantly, stimulation practices explained only a relatively small amount of variation in CREDI scores. Given this, comprehensive and multi-faceted programs that directly target children's health, nutrition, and early education are needed alongside programs for families to optimize children's outcomes. This basic principle is reflected in Brazil's "Marco Legal da Primeira Infância" legislation. The CREDI could therefore be an option for monitoring long-term progress toward this goal, as well as evaluating intervention programs to support child development at a population level."

Furthermore, the CREDI may also be used as a potential indicator for tracking progress toward meeting [Sustainable Development Goal] 4.2. Existing population-level measures of ECD (e.g. ECDI) tend to focus on older children only. The CREDI - which was designed explicitly to "bridge" with the ECDI through a set of common items - may therefore serve as a complementary measure of ECD status for the youngest, and potentially most vulnerable children."



IN "COMO MONITORAR O DESENVOLVIMENTO DE CRIANÇAS EM POLÍTICAS PÚBLICAS", PUBLISHED IN NEXO POLÍTICAS PÚBLICAS, CO-AUTHOR ELISA ALTAFIM SUMMARIZES THE RESEARCH PAPER AND ITS IMPLICATIONS FOR BRAZIL.



CO-AUTHOR ELISA ALTAFIM EXPLAINS HOW CREDI WORKS IN THE FMCSV WEBINAR "INSTRUMENTOS DE AVALIAÇÃO DO DESENVOLVIMENTO DA CRIANÇA"

## ***Brain Games: A Crèches-Based Early Intervention Program to Improve Children’s Executive Function and Self Control Skills in Brazil***

### **MAIN RESEARCHERS**

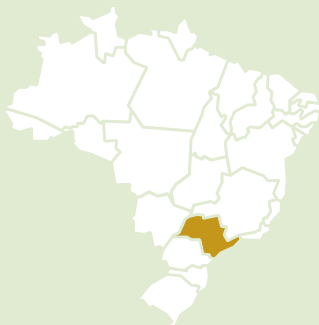
Stephanie Jones (HGSE); Dana McCoy (HGSE); Alexandra Brentani (FMUSP); Sophie Barnes (HGSE); Rebecca Bailey (HGSE); Randa Awada (HGSE)



**2017 –  
ONGOING**



**LOCATION:**  
São Paulo



**FINANCIAL SUPPORT:**  
Saving Brains Program from  
Grand Challenges Canada;  
DRCLAS Cambridge

### **OVERVIEW**

Research has consistently demonstrated the importance of children’s executive function and self-regulation skills (e.g., focusing attention, remembering information, avoiding impulsive reactions) for their later-life success. Yet many programs targeting executive function and self-regulation are complex, time-intensive, and expensive to implement, and their rigidity can limit teachers’ autonomy to select and adapt materials to the specific needs of their students. Brain Games are easy-to-implement activities that target specific “brain powers”. Each game takes about 5-10 minutes and can be integrated into existing early childhood classrooms in Brazil. In 2018, the researchers completed a randomized control trial of the Brain Games within a sample of 440 children in 44 early childhood programs located in the western region of São Paulo.

Building upon the original project, the research team is now examining how children’s increased exposure to risk factors due to the COVID-19 pandemic is affecting their learning and development, and the role that Brain Games may have played in buffering the original study’s participants from negative developmental and learning consequences caused by the pandemic. The follow-up study also serves to better understand the long-term effects of Brain Games more generally, contributing to the important debate around “fade out” versus “persistence” of ECD intervention effects. The researchers believe this will be one of the first and most rigorous studies of the implications of the COVID-19 pandemic on early childhood development and learning anywhere in the world and that it will help to inform public policy and educational intervention for adversity-exposed children in Brazil.



FIGURE ON LEFT: THE MAIN “BRAIN POWER” COMPETENCIES AND EXAMPLES OF CORRESPONDING GAMES IN BRAZILIAN PORTUGUESE. TO LEARN MORE ABOUT BRAIN GAMES, SEE THE HGSE USABLE KNOWLEDGE “FUN AND (BRAIN) GAMES” ARTICLE.

Brazilian educators helped to adapt the Brain Games by integrating stories, songs, and chants familiar to local children.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

✚ In addition to providing Brain Games materials, the intervention included training and coaching to support the teachers’ use of the Brain Games, helping to engage and build capacity of front-line early childhood workers in vulnerable neighborhoods of São Paulo.

✚ Initial analyses suggest that children in crèches and preschools that were randomly assigned to receive the Brain Games, who stayed in their assigned group for the full year, and whose teachers were coded as having higher levels of implementation (based on dosage and fidelity) showed significantly higher levels of inhibitory control and regulation-related motor skills relative to their peers in the control group. These results highlight the potential of the Brain Games for supporting young children’s self-regulation and executive function in the short run.

✚ The project was presented at the 2019 Comparative & International Education Society conference in San Francisco during the panel “Implementation findings from three different approaches to social emotional learning in Brazil early education”.

✚ During 2020, the research group contacted Brain Games study families by phone and collected data regarding family behavior during the pandemic, parental stress, and child mental health. This phone survey found that 68% of families reported high perceived stress levels and 79% felt anxious or uncomfortable due to the threat of COVID-19. Implications of these stressors for children’s outcomes is not yet known but will be addressed in the follow-up study.

## ***Early Literacy Prediction and Reading Intervention for Preschoolers From Low-Income Families***

### **MAIN RESEARCHERS**

Nadine Gaab (HGSE/HMS); Meredith Rowe (HGSE); Cíntia Alves Salgado Azoni (UFRN); Gigi Luk (McGill); Charles Haynes (MGH)



**2017 –  
ONGOING**



### **LOCATION:**

Natal, Rio Grande do Norte



### **FINANCIAL SUPPORT:**

Harvard Lemann Brazil  
Research Fund

### **OVERVIEW**

Data from the 2018 Program for International Student Assessment (PISA) reveal that only 50% of Brazilian students have attained a basic reading level. The current project studied the benefits of school intervention in reading and writing predictor skills, specifically phonological awareness and vocabulary, for supporting literacy in children at various elementary grade levels. Phonological awareness and vocabulary are important predictors of reading and are involved in decoding words and understanding reading. The most influential factor affecting these variables is the adequate training of teachers to promote pre-literacy skills through early childhood education. There are few longitudinal Brazilian studies on intervention for children with reading difficulties and none in the Northeast region. This project aimed to evaluate an intervention that trains teachers' knowledge and skills for supporting child literacy development. The children's longitudinal language and literacy outcomes were documented.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

▾ Results after the first year of the intervention showed that the children improved their ability to recognize letters and understand vocabulary, and in the second year the children were better able in relation to phonemic awareness, especially in double intervention group (GII) (see Figure 1). We also documented that parents have difficulty understanding the importance of reading in their children's lives.

↘ The performance in phonological awareness is better than in the Brazilian preschoolers from low-income families in which maternal education is higher.

↘ Working with teachers in the schools provided the research team with helpful insights into the importance of fitting the needs of the research with the local reality of children and their families in Natal. The teachers actively participated in the construction of phonological awareness and vocabulary intervention activities and grew to understand the importance of these skills in the development of reading, sharing information with colleagues in subsequent years.

↘ Two papers that derived from the research, “Summer Literacy Stagnation in Low-income Brazilian Grade School Children” and “Correlations Among Early Predictors of Literacy in Brazilian Preschoolers”, were presented at the 2019 American Speech-Language and Hearing Association convention. A third paper, “Predictive reading skills in socially vulnerable first year elementary school students”, was presented at the V International and XXV Brazilian Conference of the Brazilian Association of Neurology, Psychiatry and related professions.

↘ Dr. Charles Haynes delivered lectures on early identification of literacy skills for university students in Natal and presented on aspects of the project at the Brazil Dyslexia Association (ABD) in São Paulo. The positive impact of the partnership between the researchers, principals and coordinators culminated in the request from the Municipal Secretary of Education to extend the research through a 5th year with schools’ voluntary participation in evaluating

the children’s progress annually, when schools reopen after the COVID-19 pandemic period.

↘ The researchers developed an e-book in Portuguese about intervention activities in phonological awareness, made available free of charge so that the parents could stimulate their children during the pandemic. In addition, they made available printed versions in the research schools and provided face-to-face feedback. [Link](#)

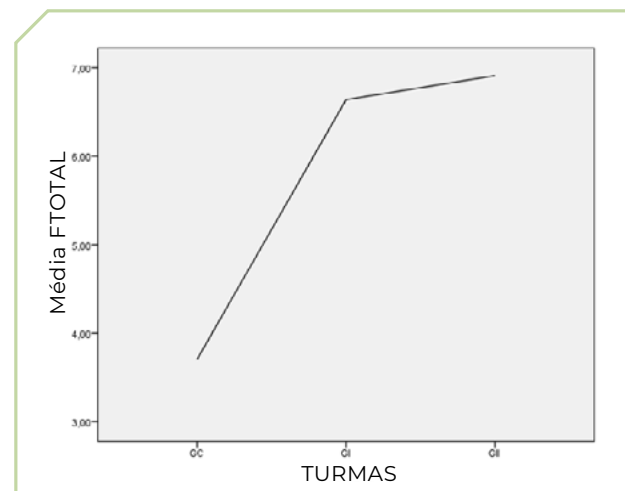


FIGURE 1. AVERAGE POINTS OF THE GROUPS IN RELATION TO PHONEMIC AWARENESS



FREE E-BOOK  
“LÉO NO  
PLANETA  
LEITURA-  
CONSCIÊNCIA  
FONOLÓGICA  
PARA FAMÍLIAS”  
[LINK](#)

## ***Maternal and Infant Health in Southern Brazilian Cities: A Cohort Study***


### **MAIN RESEARCHERS**

Antonio Fenando Boing (UFSC);  
SV Subramanian (HSPH); Alexandra  
Crispim Boing (UFSC)

 **2017 – ONGOING**

 **LOCATION:**  
State of Santa Catarina, Brazil



 **FINANCIAL SUPPORT:**  
Foundation for Research and  
Innovation of the State of Santa  
Catarina – FAPESC

### **OVERVIEW**

The state of Santa Catarina is located in Southern Brazil and its estimated population in 2021 is 7,3 million inhabitants. In 2019, the infant mortality rate in the state was 9,6 per 1,000 live births, the maternal mortality was 29.6 per 100,000 and 57.5% of deliveries were by cesarean section.

The study was divided in two complementary sub-studies and allied epidemiological and health assessment methods. The former collected primary data from a random sample of 3,580 postpartum women aiming to identify the receipt of primary care during prenatal and postpartum in the Unified Health System (public sector). Women were interviewed up to 48h after delivery and when the children were 6 months old. The latter built and applied an assessment model of the municipal management in prenatal and postpartum care. Data were obtained through official information systems and through a questionnaire sent to all municipal health managers in the state.

### **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

✎ Only 1 in 5 women was oriented by health professionals about all topics recommended by the Ministry of Health for prenatal care. It was found that 61.9% of women were instructed about the importance of exclusive breastfeeding up to 6 months, but only 46.6% were informed about breastfeeding techniques. Furthermore, only 64.0% were instructed to identify the signs of the onset of labor. Women with companion during prenatal care were 27% more likely to receive all the orientations.

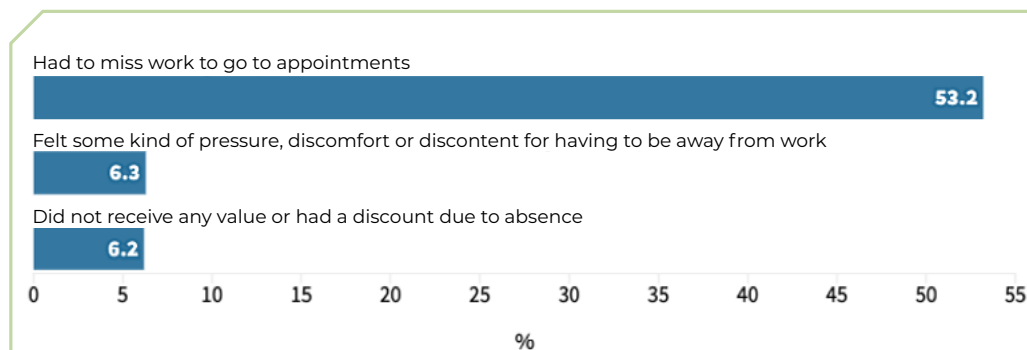
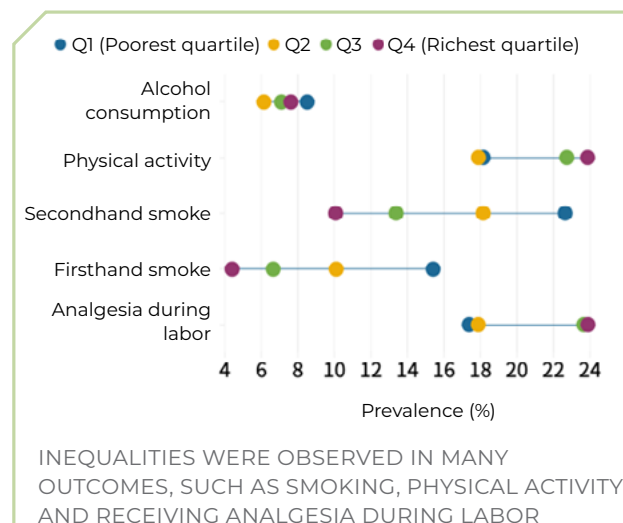
✚ In contrast, more than 98% of women underwent anti-HIV testing, urinalysis, obstetric ultrasound, blood count, fasting blood glucose, blood typing, Rh factor, and syphilis and toxoplasmosis tests. The performance of all exams was 33% more common when there was an early start of pre-natal care (<= 12 weeks).

✚ Participation in educational activities during prenatal care was low. Only 15.6% of women participated in at least one activity, and of these, only 60% attended two or more meetings. Participation was 40% and 45% lower among self-employed professionals and private sector workers, respectively, when compared to those employed in the public sector.

✚ Prenatal care was well evaluated by the postpartum women. About 80% of them rated as good or very good the physical structure of the health units, the technical training of the health teams, and the clarity of the information provided. The values reached around 90% in relation to cleanliness and respect of the health teams towards people. The most poorly rated item was the waiting time for consultation (45% rated it as regular, bad or very bad).

✚ Having a companion during labor led to better outcomes to women and babies. Women with a companion were 11%, 63% and 96% more likely to breastfeed during the first hour of life, to choose the delivery position and to receive a non-pharmacological pain management, respectively. Furthermore, they were two times less likely to be strapped down during childbirth.

✚ When analyzing the municipal indicators, 38.2% of them were classified as having inadequate infrastructure, 31.4% showed inadequate dimensioning of health services and 61.3% had inadequate longitudinal monitoring of pregnant women, postpartum women and children.



MOST WOMEN HAD TO MISS WORK TO GO TO PRENATAL CONSULTATIONS. OF THESE, ALMOST A QUARTER HAD PROBLEMS AT WORK AS A RESULT AND HAD WAGE REDUCTIONS.

## ***SEL Kernels for Brazil ECE: A Low-Cost, Evidence-Based, and Scalable Approach to Social And Emotional Learning (SEL) in Brazilian Early Childhood Settings***

### **MAIN RESEARCHERS**

Stephanie Jones (HGSE); Dana McCoy (HGSE); Alexandra Brentani (FMUSP); Ana Luiza Colagrossi (FMUSP); Rebecca Bailey (HGSE); Jennifer Kahn (HGSE); Sonya Rose Temko (HGSE); Thelma Ramirez (HGSE); Marion Geiger (HGSE)



**2018 –  
ONGOING**



### **LOCATION:**

Rio de Janeiro and Paraty



### **FINANCIAL SUPPORT:**

Lemann Brazil Research Fund, FMCSV, DRCLAS Brazil Office (FMCSV), Comunitas

### **OVERVIEW**

The goal of this project is to generate evidence about the feasibility, sustainability, and impact of an innovative approach to social emotional learning (SEL) for young children living in Brazil. The research team has worked closely with families, teachers, and early childhood specialists in two low-income communities in Brazil to identify critical SEL needs and co-develop SEL Kernels through an intensive and iterative process that is informed by both global research and local practice. The team is now ready to test a “toolkit” of evidence-based, cost-effective, and easy-to-implement SEL Kernels of practice that can be easily integrated into existing early childhood curricula in Brazil and are in alignment with the national standards (BNCC). This contextualized “toolkit” includes a set of short (5-10 minute) activities and strategies that target different SEL skills – such as executive function, emotion knowledge, empathy, and social skills – which teachers can select and customize based on the specific needs of their students or context. The ultimate goal is that SEL Kernels shown to be effective through a randomized trial can be scaled and implemented across a wide array of early childhood settings in Brazil without sacrificing quality or impact.

SEL Kernels are short, targeted, low-cost activities developed by the EASEL Lab at Harvard University. Kernels are based on a content analysis of evidence-based SEL programs. They can be adapted and used in different contexts to support children’s social and emotional development.

More information about SEL Kernels, see:

- [Brief at Wallace Foundation website](#)
- [Free and open-source set of Kernels at Greater Good in Education website](#)
- [Videos, materials and news at HundrEd website](#)

## PROGRESS TO DATE:

➤ Initial selection of SEL Kernels for Brazil early childhood settings, drawing from our EASEL's database of 25 evidence-based SEL programs and from preliminary focus groups (n=150) with families and educators in Brazil. After selected, design and delivery of a final set of 13 SEL Kernels that are explicitly aligned to specific Learning Rights and Fields of Experience in the Base National Comum Curricular (BNCC).

➤ Development of coaching materials to reflect Brazilian early childhood teachers' needs, and a set of implementation data tools and systems that are aligned to teachers' classroom practice, as well as training of trainer materials (e.g., workshop agendas, facilitator slides with notes, participant handouts).

➤ Field testing and adaptation of SEL Kernels through an ongoing, iterative co-development process with teachers in 63 Brazilian early childhood classrooms located in São Paulo and Paraty. The pilot in Paraty involved 52 teachers, 17 pedagogical coordinators, 15 school principals and approximately 800 students.

➤ The Harvard team conducted three field visits to Brazil during this funding period: Visit 1 included project planning meetings with USP partners and observations of early childhood crèches, Visit 2 included a week-long field testing workshop with local teachers, and Visit 3 included training of trainers (USP team and early childhood specialists in Brazil) and focus groups with teachers in Paraty who piloted Kernels in their classrooms for ~6 months.

➤ Due to COVID-19 and the challenges the pandemic's aftermath will present to Brazilian public school systems, the researchers are looking to conduct a large-scale implementation study of the adapted SEL Kernels in Rio de Janeiro in the context of hybrid learning during COVID-19, aiming to answer the following questions:

- Which SEL Kernels were implemented during the period of hybrid learning?
- How frequently were the SEL Kernels implemented and with what dosage?
- Were the SEL Kernels implemented with fidelity?
- What adaptations were made to the SEL Kernels?
- What was the perceived effectiveness of the SEL Kernels?
- What were the challenges of using the SEL Kernels in this context?



CHILDREN AND TEACHER ARE TAUGHT “STOP AND THINK POWER” DURING PILOT WORK.

## ***Early Institutionalization Intervention Impact Project (EI-3)***

### **MAIN RESEARCHERS**

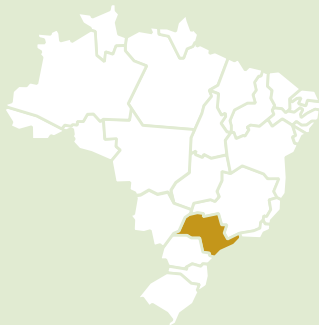
Charles Nelson (HMS, HGSE); Nathan A. Fox (Maryland); Charles H. Zeanah (Tulane); Edson Amaro Jr. (PENSI); Nara Brito (PENSI); Julie Staples Watson (Maryland)



**2018 –  
ONGOING**



**LOCATION:**  
São Paulo

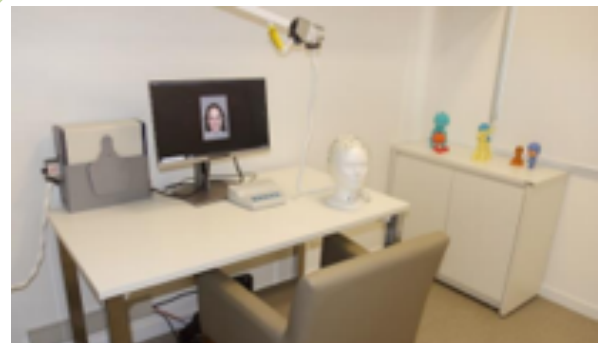


### **FINANCIAL SUPPORT:**

Lumus Foundation;  
Interamerican Development  
Bank; Harvard Lemann Brazil  
Research Fund; FMCSV; DRCLAS  
Brazil (FMCSV); Instituto PENSI;  
Two Lilies Fund

### **OVERVIEW**

The Early Institutionalization Intervention Impact Project will document and compare the impact of institutional care on early childhood development to that of high-quality foster care. Children under two years of age who have been removed from their homes by the Childhood and Youth Court will be randomized to placement in enhanced foster care or enhanced institutional care. Children will participate in an initial screening assessment, after which children and caregivers in both institutional care and in foster care will participate in a caregiving training to promote sensitive caregiving. After the intervention, children will participate in up to three follow-up assessments at 12 months, 24 months and 36 months, depending upon the age at which the child entered the study.



EI-3 LABORATORY SET UP AT INSTITUTO PENSI

## PROGRESS TO DATE:

- Approval from appropriate Research Ethics Commissions in Brazil and by the Boston Children's Hospital IRB.
- A cooperation agreement with the São Paulo Court of Justice was developed and signed.
- Meetings with judges and technical teams of Penha de França, Central, Santana, Santo Amaro and Lapa Child and Youth Courts.
- An agreement with Municipal Secretariat of Assistance and Social Development was developed and signed.
- Instituto PENSI completely renovated its office space to accommodate the EI-3 Project. To make this possible, PENSI relocated the space for two office sectors. The three research laboratory rooms include a behavior room, an EEG room, and a control room. Additionally, PENSI has refitted a small waiting area for participants. These rooms are properly equipped with electronic and audiovisual devices, in addition to EEG and eye-tracking.
- The US-based research team exported the EEG and Eye Tracking systems to the Brazilian research team's laboratories through a loan from the University of Maryland, which will last for the duration of the study.
- Research assistants took part in three days of training to use the Philips-EGI EEG system as well as the This is My Child, Stranger at the Door, and Strange Situation Procedure protocols, which are key for assessing child development.
- A data and safety monitoring board was established. This council of specialists aims to monitor the research, focusing on the safety and quality of the data generated, the well-being of the participants involved, and the proper fulfillment of the planned actions. The EI-3 Project has already invited local representatives to participate in this council, and will plan, during the course of the research, biannual meetings with such members.
- Presentation of the BEIP project and EI-3 at the "Seminar "Impacts of Early Intervention - Foster Care as an alternative to Institutional Care" with the Escola Paulista da Magistratura.



EI-3 RESEARCHERS PRESENT ON "IMPACTS OF EARLY INTERVENTION - FOSTER CARE AS AN ALTERNATIVE TO INSTITUTIONAL CARE" AT THE ESCOLA PAULISTA DA MAGISTRATURA

# ***Parent-Child Interaction and Child Language Development in Low-Income Families in Brazil***

## **MAIN RESEARCHERS**

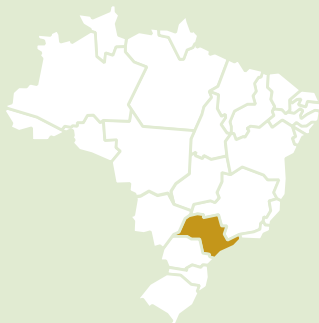
Meredith Rowe (HGSE); Guilherme Vanoni Polanczyk (FMUSP); Fernanda Alcarão (FMUSP); Renata Amável (FMUSP), Qianru Tiffany Yang (HGSE)



**2018 –  
2020**



**LOCATION:**  
São Paulo



**FINANCIAL SUPPORT:**  
Harvard Lemann Brazil  
Research Fund; FMCSV

## **OVERVIEW**

Language development is an area most affected by early experience. The study aims to understand how low-income mothers in Brazil communicate with their infants and what aspects of that communication predict children's language development. Specifically, the project goals are 1) to identify the extent of variation in the quantity and quality of language input that mothers in a poor urban area in Brazil use during a play interaction with their 12-month-olds; 2) to determine what factors, if any, predict variation in mothers' communication with children; 3) To determine what features of mothers' input at child age 12-months predict children's cognitive outcomes one year later. And, finally, 4) To understand the similarities and differences in parent input in Brazil versus the US.

## **SELECT FINDINGS, OUTCOMES AND IMPACTS:**

➤ Initial analyses indicate that at child age 12-months, about half of the sample of children were using pointing gestures during the interactions with their mothers in São Paulo. Furthermore, infants that were producing points at 12-months had parents who talked more and pointed more with them during interactions, and had greater language outcomes a year later at age two (Figure 1).

➤ Looking cross-culturally, the researchers see very similar patterns within each culture – that is the relation between parent communication measures, children's early use of pointing gestures, and children's later

language skills. However, differences in distributions of various measures across cultures are observed, with the Boston mothers communicating more overall with their children (Figures 2 and 3). These differences in amount of parent communication may indeed be due to overall differences in education levels across the two samples, with the Boston sample having more years of schooling than the sample in São Paulo.

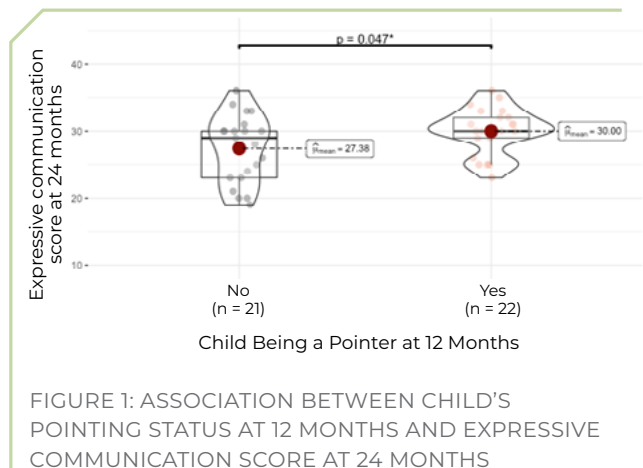


FIGURE 1: ASSOCIATION BETWEEN CHILD'S POINTING STATUS AT 12 MONTHS AND EXPRESSIVE COMMUNICATION SCORE AT 24 MONTHS

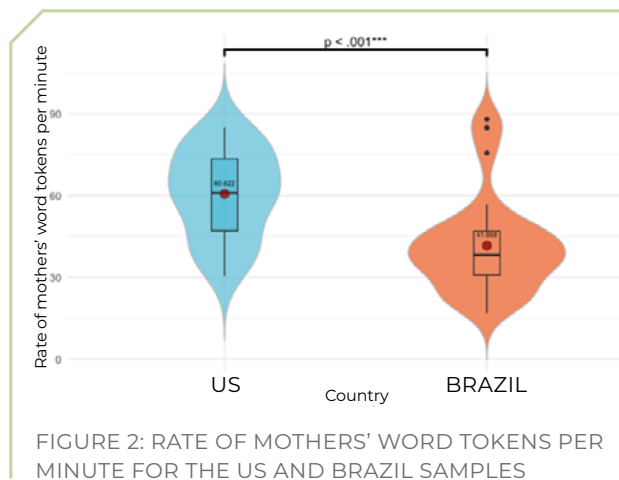


FIGURE 2: RATE OF MOTHERS' WORD TOKENS PER MINUTE FOR THE US AND BRAZIL SAMPLES

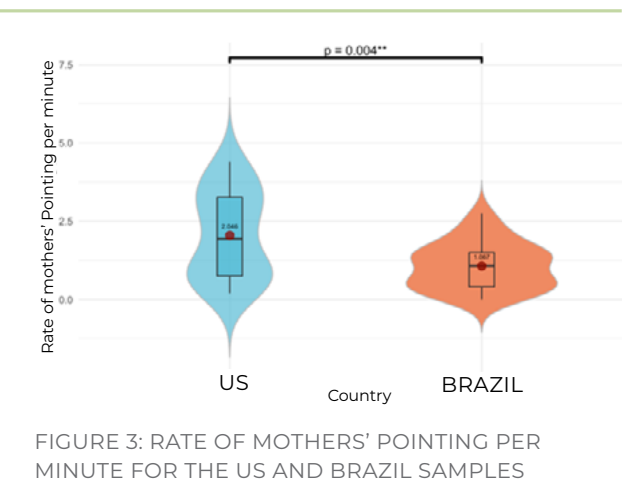


FIGURE 3: RATE OF MOTHERS' POINTING PER MINUTE FOR THE US AND BRAZIL SAMPLES

➤ The longer-term impacts of this work are twofold:  
 ➤ First, the Harvard team has trained researchers in Brazil in the methods used to accomplish this research which can be passed on to future students interested in early language development in Brazil. Specifically, one Postdoc and one Master's student working with Dr. Polanczyk came to Harvard and were trained by Dr. Rowe and her PhD student Tiffany Yang on the methods used to code and process data from videotaped parent-child interactions. They returned to Brazil and hired several undergraduate researchers, who were also trained, to help code the data.


➤ Second, the findings suggest that in this very low-income sample of mothers and infants in São Paulo, there is variability in how the mothers interact with the children, and variation in the children's early communicative skills, that relate to later language outcomes. Therefore, this information can be used for interventions with this population to potentially help parents improve their children's early language environments and learning.

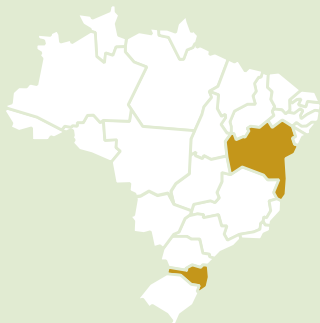
## ***A Preschool Intervention in Brazil to Enhance Poor Children's School Readiness***

### **MAIN RESEARCHERS**

Elizabeth Spelke (FAS); Chrissie Ferreira de Carvalho (UFSC); Nara Cortes Andrade (UCSAL)

 **2018 –  
ONGOING**

 **LOCATION:**  
Salvador, Bahia and  
Florianópolis, Santa Catarina



 **FINANCIAL SUPPORT:**  
Harvard Lemann Brazil  
Research Fund

### **OVERVIEW**

Research in the cognitive and brain sciences provides evidence for numerical and geometrical abilities that are present at birth, and that serve as a basis for children's learning of school mathematics. Furthermore, social, and emotional information are critical skills for effective communication, metacognition, and learning from others. Gaps in school learning emerge early in life and lead to gaps in long-term achievement. Moreover, adversities experienced during early childhood can have powerful and long-lasting influences that may affect brain and the development of cognitive, social, and emotional skills. The researchers propose to develop and test two games-based curricula that aim to enhance poor Brazilian preschool children's school readiness. One curriculum focuses on developing children's numerical and geometrical skills. The other curriculum focuses on developing children's social cognitive abilities. These games, based on research in developmental cognitive neuroscience, exercise children's intuitive abilities to reason about number and geometry while teaching children the words, symbols, and operations of primary school mathematics (especially number words, symbols, shape names, and spatial symbols such as maps). Additionally, exercises children's abilities to understand people's intentions and beliefs, emotions, social relationships, feelings, and actions. They include materials at a range of difficulty levels that make them suitable for play in preschools, kindergarten, and first grade classrooms.

## PROGRESS TO DATE:

➤ The first project year was devoted to adapting and developing games and a full set of assessment measures for early childhood. Additionally, a group of pilot studies was conducted. Brazilian pilot studies involved test the new games studies at individual and group level with preschool children from Salvador-Bahia and Florianopolis - Santa Catarina. A randomized controlled study, ran by Spelke's lab in Cambridge, demonstrated that a 2-3 week home-based intervention with numerical board games improved preschool numerical concepts, compared to children who played a social games.

➤ The second year focused on a small-scale experiment to evaluate the first evidence of two curricula, one based on math games and other based on social cognitive games. This study took place in public preschools in Salvador, Brazil, with a population of extremely poor children at high risk of underperforming in school. The games were well suited for educators in underfunded schools. Implementing this intervention does not require high cost materials or lengthy special training. Children could play with the games after a brief and simple explanation from their teachers and without the need for continuous teacher involvement. Results showed evidence that the 12 week game-based intervention effectively stimulated children's socioemotional skills. Furthermore, teachers' perceptions highlighted children's cognitive and socioemotional gains. The project's impact emphasizes children who live in the context of adversity during early childhood, a period especially sensitive to preventive intervention.

➤ Additionally, the project influenced future generation of academics and practitioners. A trained team of investigators and students participated in the study (postdoctoral fellows, research assistants, graduate, and undergraduate students). To maximize the effectiveness of their training, both Brazilian investigators, Carvalho and Andrade, spent 6 months in Spelke's lab (Carvalho in Year 1; Andrade in Year 2), strengthening research teams in their home institutions in Brazil (UCSAL in Salvador and UFSC in Florianópolis). During their visits, two Brazilian students, one supervised directly by Carvalho and one by Andrade, undertook internships in Spelke's lab.

➤ In Brazil, the project developed an active collaboration between the universities and the Department of Education by carrying out joint teacher training activities, in addition to meetings between researchers and public managers with an interest to contribute to planning and monitoring public policies for early childhood. The actions contributed to strengthening relations between the universities and society to reduce inequalities by building bridges between public policies and cognitive and brain sciences to foster research-based growth.



CHILDREN ENGAGED IN ONE OF THE PROJECT INTERVENTIONS IN SALVADOR DA BAHIA

## ***Population-Based Studies on Maternal Health and Child Development in Ceará***

### **MAIN RESEARCHERS**

Hermano Rocha (UFC + HSPH); Christopher Sudfeld (HSPH); Alvaro Leite (UFC); Marcia Machado (UFC) Luciano Lima Correia (UFC); Anamaria Cavalcante e Silva (Unichristus); Jocileide Sales Campos (Unichristus); Sabrina Gabriele Maia Oliveira Rocha (UFC/Unichristus)



**2019 – ONGOING**



**LOCATION:**  
Fortaleza, Ceará



**FINANCIAL SUPPORT:**  
FUNCAP; DRCLAS Brazil Office (FMCSV); DRCLAS Cambridge

### **OVERVIEW**

At the end of 2018, Hermano Lima Rocha began a postdoctoral research fellowship at the Harvard T.H. Chan School of Public Health under the supervision of Professor Christopher Sudfeld. They began working together to analyze data from the 'Study on Maternal and Child Health in Ceará, Brazil' (PESMIC study) and eventually began collecting new data as well. The DRCLAS Brazil Office supported Professor Sudfeld's first visit to Brazil in February of 2020, in which he had the opportunity to meet with relevant researchers in São Paulo before spending a few days in Ceará to progress on the collaborative research and speak at a public event. DRCLAS has continued supporting the research group by helping them communicate their research findings through Nexo Políticas Públicas and other dissemination strategies.



THE RESEARCH GROUP PUBLISHED *5 PONTOS SOBRE OS EFEITOS DA EXPOSIÇÃO A TELAS ELETRÔNICAS NA PRIMEIRA INFÂNCIA* IN NEXO POLÍTICAS PÚBLICAS. THE PIECE HELPED INFORM THOUSANDS OF BRAZILIANS ABOUT HOW SCREEN TIME AFFECTS CHILD DEVELOPMENT AND WAS LIKED OVER 3,400 TIMES ON SOCIAL MEDIA.

## SELECT FINDINGS, OUTCOMES AND IMPACTS:

↘ “There is a relatively high population-level prevalence (9.2%) of development delay in at least one domain among children 0–6 years of age in Ceará, Brazil. Integrated child development, social support, and poverty reduction interventions may reduce the population-level prevalence of development delay in Ceará and similar settings.” [Link](#)

↘ “These findings highlight the need for policies and interventions to reduce the impact of the COVID-19 pandemic on food insecurity and maternal mental health in Brazil. A few potential strategies include extending or increasing the government COVID-19 assistance programme, direct provision of food to families in need and expanded access to mental health services.” [Link](#)

↘ “Overall, [adverse child experiences] (ACEs), [maternal mental health], and [intimate partner violence] were independently associated with developmental outcomes in children from a poor Brazilian region. Moreover, ACEs showed a linear association with child development: the higher the number of ACEs experienced, the lower the development scores... The high prevalence of ACEs for children aged <5 years in the studied population suggests an urgent need for policy and programming for early-life intervention in the state of Ceará and similar settings. The studied ACEs originate in the family environment, and programs that encourage parenting and provide social support to families may reduce ACEs and thereby improve development outcomes.” [Link](#)

↘ “Pregnancy and neonatal care factors were associated with later child development outcomes. Infants at increased risk of suboptimal development, like LBW or newborns requiring extended in-patient care, may represent groups to target for supplemental intervention.” [Link](#)

↘ The authors found that undernutrition and short duration of breastfeeding are associated with development outcomes among Brazilian children. As a result, integrated nutritional programs may improve child development outcomes.” [Link](#)

The researchers have also published several additional pieces in Nexo Políticas Públicas, including:

↘ [“Qual o impacto de experiências adversas para o desenvolvimento infantil”](#) (Nexo Políticas Públicas)

↘ [“Como a pandemia aumentou a insegurança alimentar no Ceará”](#) (Nexo Políticas Públicas)

↘ [“Como o desenvolvimento infantil é impactado pela desnutrição e aleitamento materno”](#) (Nexo Políticas Públicas)

## ***An Evidence Game–Based Intervention to Enhance Social-Emotional Skills in Context of Adversity in Brazil: A Comprehensive Approach for Typical Children and Children with Autism***

### **MAIN RESEARCHERS**

Jesse Snedekder (FAS); Elizabeth Spelke (FAS); Chrissie Ferreira de Carvalho (UFSC); Nara Cortes Andrade (UCSAL & UFJF)

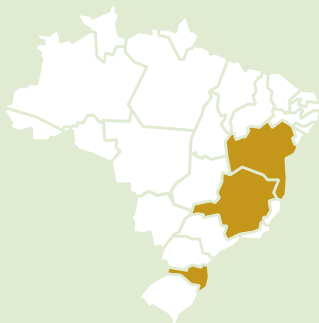


**2020 –  
ONGOING**



### **LOCATION:**

Savador, Bahia;  
Juiz de Fora, Minas Gerais;  
Florianópolis, Santa Catarina



### **FINANCIAL SUPPORT:**

Harvard Lemann Brazil  
Research Fund

### **OVERVIEW**

Research in developmental psychology and neuroscience reveals that poverty affects brain development in ways that can impact future learning and mental health. Children who have developmental disorders and are also raised in poverty are doubly disadvantaged. Autism Spectrum Disorder (ASD) is characterized by deficits in social interaction and communication, as well as restricted interests and repetitive behaviors. Children with ASD have significant impairments in social cognition. These challenges can be magnified by poverty, which limits a family's ability to seek treatment or invest in interventions. While the literature is large regarding interventions in children with ASD, there are important gaps: a lack of intervention studies in poor communities, an absence of interventions that use non-computerized games, and a lack of studies that focus on improvement in social knowledge as opposed to the degree of social engagement.

The present study developed a set of social games aimed to promote children's concepts of mental states, social interactions, and social decision-making. The game-based intervention was planned to be evaluated in two experiments. Experiment 1 is a school-based intervention with typically developing children testing two new social and two new math games. Experiment 2 is a game-based intervention with ASD children. Our goal is to develop evidence-based interventions to promote school inclusion. Due to COVID-19 pandemic scenario, these two experiments have been preceded by online home-based interventions trials.

## PROGRESS TO DATE:

Social games were designed to be played both individually as well as in groups in digital and face-to-face formats. Emotion Hunter game is an untimed board game that exercises intuitive concepts of emotion, as well as the actions, states, and events that elicit these emotional expressions. The Emotion Hunter game (figure 1) includes: emotion recognition of primary, secondary, and mixed emotions, as well as emotional situations social contexts displayed into a non-symbolic (cartoons) and symbolic (story-based narrative) ways. Curious Mind game is a card game that aims to exercise intuitive concepts of the relationship

between perception, desires and beliefs based on theory of mind developmental perspective that included four different mental-state contrasts: diverse desire, diverse belief, knowledge access, and first and second-order false belief. Additional games include the Space Battle game, which challenges children to understand the characters' actions, their preferences, and the inference of costs and benefits, as well as the Life Path game, which focuses on social decision-making, ability to process multiple alternatives and to choose an optimal course of action in situations that affect others as well as ourselves.

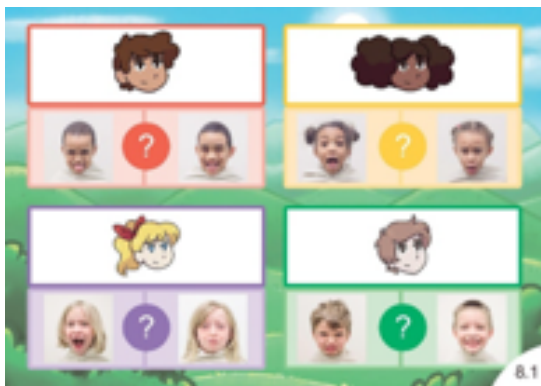


FIGURE 1 – EMOTION HUNTER GAME



FIGURE 2 – CURIOUS MIND GAME

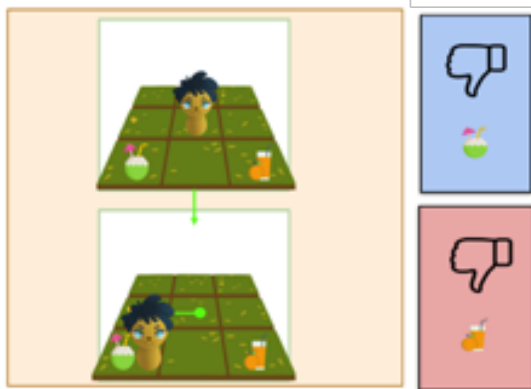


FIGURE 3 – SPACE BATTLE GAME

To adjust to COVID-19 preventive measures, the games were adapted for online, home-based studies. The team conducted pilot studies to check children's and family's receptivity to the online format of the games and assessment. In addition, agreements with clinics and public health services specialized in the care of children and adolescents with ASD were made. The next steps will include presentational data collection for Experiment 1 and Experiment 2 in three Brazilian states: Bahia, Minas Gerais and Santa Catarina.

# ***The Development, Implementation, and Evaluation of an Early Language Development Parenting Program for Social Assistance Community Centers in Brazil***

## **MAIN RESEARCHERS**

Meredith Rowe (HGSE), Flavio Cunha (Rice), Guilherme Irffi (UFC)

 **2020 – ONGOING**

 **LOCATION:**  
Caucaia, Ceará



 **FINANCIAL SUPPORT:**  
Harvard Lemann Brazil Research Fund

## **OVERVIEW**

The quality of the home environment in low-income areas in Brazil is low. Almeida et al. (2020) show that the Home Observation for the Measurement of the Environment (HOME) score for children in low-income households in Ceara, Brazil (the location of this project) is nearly 2.8 standard deviations below the USA mean. Further, interventions in developing countries that improve disadvantaged children's environment cause improvements in child development (e.g., Baker-Henningham & Boo, 2010).

This project aims to develop, implement and evaluate a program designed to increase parents' knowledge of child development and promote high-quality parent-child interactions in the home. The target population is parents of young (0-3) children in Ceara Brazil. The program will be designed to be implemented through the Social Assistance Community Centers (CRAS) so that groups of parents can be reached simultaneously, so that fidelity can be tracked, and so that ultimately the program scaled to other centers in Brazil. The program will be evaluated by comparing the participants to a control group in this initial study.



THE OLGA AND PARSIFAL BARROSO EARLY EDUCATION CENTER, WHICH IS COLLABORATING ON THE STUDY.

The Olga and Parsifal Barroso Early Education Center (EEC), maintained by Myra Eliane Foundation, is located right next to the Araturi CRAS. The EEC has high-quality professionals that are key to help design and train the local CRAS workforce to implement our parenting intervention at a high level of fidelity.

The parenting program will be center- and group-based to fit the SCFV format. The program will emphasize the importance of adult-child verbal and nonverbal interaction to promote language development (see research by Rowe & Leech, 2019). The program will consist of weekly sessions that will last approximately 13 weeks. We expect that the group size will be about 20 parents so that parents can exchange ideas and build social capital. Other aspects of the interventions will be jointly constructed by the team as a result of this proposal.

The researchers will conduct three types of evaluation:

1. Fidelity of Implementation: The team will measure the fidelity of implementation to understand program impacts. The fidelity instruments will be useful to help other CRAS implement the programs at a high level of quality.

2. Qualitative Interviews: The researchers will interview ECE staff, CRAS staff, and up to ten treatment families to obtain context about the intervention; learn the difficulties ECE staff faced to provide training and technical support to CRAS staff; document the challenges CRAS staff face in implementing the intervention (e.g., recruitment, parental engagement); and, finally, elicit information about which aspects of the intervention are more or less useful from the point of view of parents.

3. Quantitative Impact Evaluation: The researchers will collect data at baseline and endline for control and treatment groups. In each data collection wave, they will measure variables directly related to the interventions:

↳ Parenting Knowledge of Child

Development (APKAS; O'Donnell, 2019)

↳ Language Environment: LENA System (Gilkerson et al., 2008).

↳ Parent Sensitive Responsiveness: PICCOLO (Roggman et al., 2013; Schneider, 2018).

### **PROGRESS TO DATE:**

In the first stage of this project in 2020-2021 Dr. Rowe and her Research Assistant, Lizzie Baird, developed the parenting intervention curriculum titled “Everyday moments: How to foster early childhood development at home”. The curriculum consists of 11 sessions to be implemented in the community centers in Ceara, Brazil as part of the research. In summer 2021, Rowe & Baird ran a week-long training for Dr. Irffi and his group of Research Assistants in Brazil, teaching them the curriculum so that they are prepared to train the local teachers.

Drs. Irffi and Cunha developed the instruments to measure the fidelity of implementation (expectation regarding training, training evaluation, and observation of the intervention). In addition, Dr. Irffi developed a glossary with the terms of the intervention and has been dedicated to the translation and validation of the material (guide and the instrument of Parenting Knowledge of Child Development) of the intervention in Brazil.

## IRACEMA-COVID

### MAIN RESEARCHERS

Marcia Castro (HSPH); Marcia Machado (UFC); Ana Luiza Penna (HSPH); Jordan Prazeres (UFC); Simone Farias-Antunez (UFC/DRCLAS); Jannely Villarreal (DRCLAS); Camila Machado de Aquino (UFC/IPREDE)



### OVERVIEW

In 2020, DRCLAS provided support to the project “*A Vida em Casa: Narrativas de mães sobre as implicações da Covid-19 nos modos de cuidado oferecidos na primeira infância*”, which was an initial qualitative study to understand how mothers with young children were coping with the COVID-19 pandemic. DRCLAS has continued supporting the Fortaleza-based research group on a survey-based cohort study that aims to understand the impact of COVID-19 and social distancing on parenting, maternal mental health, and child development. The name IRACEMA-COVID derived from *Importância dos Riscos Associados ao Coronavírus nas Experiências Maternas e Amparo aos bebês*.



**2020 – ONGOING**



**LOCATION:**  
Fortaleza, Ceará



**FINANCIAL SUPPORT:**  
DRCLAS Brazil Office (FMCSV),  
CNPq, FMCSV, FAPESP



PHOTO CREDIT: CAMILA LIMA, IN DIÁRIO DO NORDESTE

## SELECT FINDINGS, OUTCOMES AND IMPACTS:

➤ Of the sample of 1,041 pregnant women:  
➤ 48.2% had appointments cancelled or delayed due to social distancing and 35.3% neglected to seek out health services for fear of Covid-19

➤ 64.7% say they feel nervous, 39.8% say they sleep poorly, 40.4% say they feel sad, 42.5% say they have difficulty making decisions, and 43.1% say they become tired easily


➤ “Of the 1,041 pregnant women, 45.7% (95%CI: 42.7–48.8) had common mental disorders (CMD). All items of the Fear of COVID-19 Scale showed a significant association with the prevalence of CMD ( $p < 0.001$ ). A CMD risk gradient was observed, going from a prevalence ratio of 1.52 (95%CI: 1.13–2.04) in pregnant women with two positive items to 2.70 (95%CI: 2.08–3.51) for those with four positive items. Early gestational age and the lack of prenatal care were also associated with CMD.” [🔗 Link](#)

➤ Jordan Prazeres defended his masters dissertation on the study, called [“A Vida em Casa: Narrativas de mães sobre as implicações da Covid-19 nos modos de cuidado oferecidos na primeira infância”](#)

➤ Simone Farias-Antunez, a Postdoctoral Research Fellow supported by DRCLAS, had her manuscript “Breastfeeding practices before and during the COVID-19 pandemic in Fortaleza, Northeastern Brazil” accepted for publication by the Journal of Human Lactation

➤ “A UFC explica que mulheres grávidas tendem a apresentar com maior frequência esses [transtornos mentais comuns]. Contudo, a pandemia levou esse quadro a outro patamar de gravidade. O estudo concluiu que os sentimentos negativos despertados pelo coronavírus fizeram elevar em até três vezes a prevalência de tais problemas entre as pessoas desse grupo.” See [Medo da pandemia de Covid aumenta chance de transtornos mentais em grávidas, diz estudo da Universidade Federal do Ceará com Harvard](#) (G1)

➤ “Não ter um companheiro, viver em uma moradia com mais de quatro pessoas, sem distanciamento, e não fazer ou interromper o pré-natal também foram fatores que aumentaram a prevalência de transtorno mental nessas gestantes”, - Marcia Machado in [4 a cada 10 grávidas em Fortaleza têm sinais de transtorno mental na pandemia, aponta estudo](#) (Diário do Nordeste)



CO-INVESTIGATOR MARCIA MACHADO DISCUSSES THE IMPACTS OF SOCIAL ISOLATION ON PREGNANT WOMEN IN “CONVERSATION WITH SCIENCE” VIDEO

## *Examining The Effects of Covid19 Restrictions on Literacy Practices in a Child's Home: A Global Survey Study*

### **MAIN RESEARCHERS**

Nadine Gaab (HGSE), Júlia Beatriz Lopes-Silva (UFMG) and Cíntia Alves Salgado Azoni (UFRN)

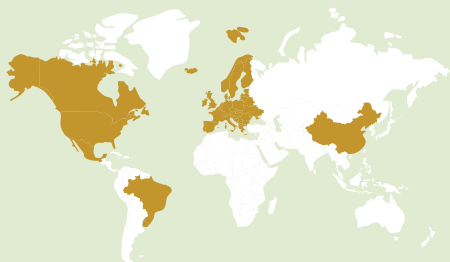


**2020 –  
ONGOING**



### **LOCATION:**

Brazil, North America, Europe, China and Uruguay



### **FINANCIAL SUPPORT:**

Harvard Lemann Brazil Research Fund

### **OVERVIEW**

Pandemics and resulting school closures are often studied from a public health perspective. This usually focuses on steps to contain the virus, omitting important research pertaining to school closures' educational implications. It has been shown that during school closures (e.g., during prolonged summer vacations or natural disasters), the home literacy environment of a child is of great importance for the development and maintenance of early reading skills. This project aims to characterize and quantify the potential change of the Home Literacy Environment (HLE) and other enrichments among families with children aged 0-11 years from various SES backgrounds during the 2020/21 period of COVID-19 restrictions in four geographical areas: North America, Europe, China, Uruguay, and Brazil. The proposed sample size of 4000 families in Brazil (and 10,000 overall) will give the researchers sufficient statistical power to detect small effect sizes.

### **PRELIMINARY FINDINGS AND IMPACT:**

- As of July 5th, 2021, 1651 participants responded with information regarding 2223 children. Preliminary findings presented here is related to this Brazilian subsample.
- Regarding pre-pandemic literacy practices and resources in Brazil, analyses of a subsample of the participants have revealed that:
  - Brazilian families in general do not own many books, which could be related to cultural and educational practices.
  - Families from rural areas and small cities have significantly less access to literacy resources compared to families from bigger

cities, and the same pattern holds when comparing families from lower SES to families with higher SES.

✚ The frequency with which families engaged in literacy activities, though, did not vary regarding their socio-economic background. This highlights how home literacy activities can be performed and promoted irrespective of families SES backgrounds.

✚ Analyses run to investigate the impact of COVID-19 restrictions on home literacy practices and resources in Brazil found:

✚ In general, families acquired more digital books, games and adults' books after COVID-19 restrictions we put in place. Interestingly, the frequency in which families engaged in home literacy activities, such as playing games and reading, significantly increased. Nevertheless, the amount of time someone read to children consistently decreased.

✚ In the group with the least educated caregivers, only the number of digital books and newspapers increased after the COVID-19 restrictions, and in the higher education group, the number of digital books and both games and digital games increased.

✚ Surprisingly, regardless of ethnic group or income, there was a decrease in the number of adults' books after COVID-19 restrictions.

✚ The education of the caregiver impacted the literacy activities: in the highly educated group, the frequency of all activities asked in the survey increased, but in the families with lower education, there was not statistical differences between the frequency the child read books independently, requested someone to read to him/her and played with letters before and after the COVID-19 restrictions.

✚ In the higher income group and in the non-white group, the time someone read to the child decreased after COVID-19's restrictions, but, in general, the time children read independently significantly increased. This could suggest that caregivers were not available to interact with children in reading activities but children themselves were reading more after the COVID-19 restrictions.

✚ Children at risk for dyslexia were at a disadvantage concerning the family literacy environment compared to children without risk before and during the COVID-19 restrictions: fewer children's and adult books, less use of educational games, less frequency of independent reading, and less frequency that someone read to the child.

✚ During the COVID-19 restrictions, children at risk for dyslexia required more support to complete school assignments, received less real-time online activity instruction time from teachers, and spent less time doing school activities and assignments.

✚ Children with and without risk for dyslexia increased their use of digital devices during the pandemic, predominantly tablets, television, and video games.



AFTER FILLING THE SURVEY, PARTICIPANTS WERE GIVEN ACCESS TO "LEITURA EM CASA: PRÁTICAS DE LITERACIA NO AMBIENTE FAMILIAR", A BOOKLET DEVELOPED BY THE RESEARCH TEAM ABOUT HOME LITERACY.

# ***Optimal Design of Digital Early Childhood Development Interventions: A Multifactorial Randomized Control***

## **MAIN RESEARCHERS**

Dana McCoy (HGSE); Jorge Cuartas (HGSE); Julieta Trias (World Bank); Jimmy Oliveira (IPECE); Camila Machado (UFC/IPREDE); Pompéia Villachan-Lyra and colleagues (UFRPE)



**2021 –  
ONGOING**



**LOCATION:**  
Ceará



**FINANCIAL SUPPORT:**  
World Bank, DRCLAS Brazil  
Office (FMCSV), FMCSV

## **OVERVIEW**

➤ In Brazil, 61% of young children are exposed to vulnerable living conditions that likely limit their developmental potential. Brazil has invested heavily in several large-scale initiatives, including a national home visiting program for young children called Criança Feliz that seeks to train and support vulnerable parents so that they can engage in activities that promote their children’s development and learning.

➤ This study aims to use a cluster-randomized multifactorial randomized control trial to assess the effectiveness of the Afini Brasil intervention for improving (1) parents’ mental health and caregiving practices and (2) 0- to 3-year-old children’s development and learning outcomes for families who are participating in Criança Feliz in the state of Ceará. Afini is a “virtual assistant” that uses a chatbotto recommend age-appropriate activities to support children’s development. By working with the Criança Feliz program, we aim to understand how Afini might provide additional benefits for vulnerable children and families already receiving home visiting services. Within the group of study participants receiving the Afini treatment, we also plan to rerandomize individuals to receive different forms/features of Afini (e.g., delivery through Facebook Messenger vs. Afini App) in order to understand how to further optimize Afini’s impact and cost-benefit ratio.

➤ To our knowledge this will be the first study to examine the effectiveness of a digital ECD intervention for families receiving government services in a low- or middle-income country. Our study design will allow us to understand whether this intervention is effective for improving parent and child outcomes, and also the specific features of the program that can maximize its (cost) effectiveness. By addressing these questions, the results of this study will inform precisely how digital interventions like Afini can be used to support vulnerable families in low-resourced settings.



EXAMPLE 1 OF ACTIVITY THAT AFINI SUGGESTS FOR PARENTS WITH YOUNG BABIES.



EXAMPLE 2 OF AFINI ACTIVITY SUGGESTION.

**10 YEARS OF THE HARVARD-BRAZIL  
INITIATIVE ON EARLY CHILDHOOD  
DEVELOPMENT (2011-2021)**



HARVARD UNIVERSITY  
**DAVID ROCKEFELLER CENTER  
FOR LATIN AMERICAN STUDIES**  
BRAZIL