

## **I. Proposed Core Hypothesis\Question on Developmental Disparities across Ethnic Groups**

### Overarching Question:

What are the distinct pathways to healthy cognitive, social emotional, and physical development within and across diverse ethnic groups in the U.S.? How do the various contexts of children's development (e.g., family, school, community) interact to affect developmental outcomes in different populations? What factors promote success? What factors obstruct behavioral and intellectual equality across groups?

### Hypothesis to address overarching question:

Differences across ethnic groups in genetics, parenting beliefs, parents' experiences and parents' economic and social opportunities shape the structure and quality of children's home and childcare experiences (e.g., engagements with parents and other primary caregivers; time spent in childcare). These experiences in childhood, in turn, affect children's developmental trajectories in various developmental domains, including:

- a) Physical & Health: (e.g., growth, nutrition, patterns of illness and disease, sleep regulation, sensori-motor development, behavioral regulation, brain development)
- b) Cognitive: (e.g., language, literacy, school readiness, academic achievements in math, science and reading).
- c) Social-Emotional & Mental Health (e.g., peer relations, emotional regulation, internalizing and externalizing behaviors).

### Subhypotheses:

Genetic structure in different ethnic groups varies. Additionally, different ethnic groups experience different exposures, based on occupation, economic opportunities, and regions of population concentration. Genetics will interact with environmental exposures and early experiences to affect children's developmental trajectories. Belief systems regarding key parenting strategies/practices (e.g., views about discipline) also vary with ethnicity; these belief systems will interact with genetics, exposures and social and economic opportunities to shape parenting and children's early experiences.

Developmental domains will interact to affect outcomes. For example, ethnic group differences in health factors might spill over to children's functioning in the other domains.

Religion & spirituality will play different roles in different ethnic groups.

Community context will also affect outcomes. For example, minority children within majority communities will differ from minority children being reared in communities where there is high prevalence of their ethnic group.

## **II. Workgroup(s) – collaboration across Working Groups is encouraged:**

The workgroups most central to this hypothesis are: Development and Behavior group, Social Contexts, Health Disparities, Chemical Exposures, and Injuries.

### **III. Contact Person for Proposed Core Hypothesis\Question (include phone and email):**

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### **IV. Public Health Significance:**

There exist unprecedented changes in the demographic landscape of the U.S. today. Within the next several decades, people identified as ethnic “minority” will comprise over half the U.S. population. New waves of immigrants continue to arrive, ensuring fundamental but unknown changes in the intercultural dynamics of communities, schools and other contexts. More often than not, differences in ethnicity are associated with dramatic between-group differences in children’s social and economic opportunities, language, environmental exposures, and home and school experiences. Of paramount concern are the glaring disparities that exist in children’s cognitive, health, and social-emotional outcomes across ethnic groups. These cultural differences remain unexplored and poorly understood, thereby circumventing the design of culturally sensitive and effective interventions and programs.

As one example, the academic underachievement of certain ethnic minority groups in the U.S. (in both reading and math scores) continues to perplex educators, scientists, and policy makers. The United States has evolved into a “knowledge-driven” economy, making a solid education, particularly in math and science, vital for an increasingly large sector of the workforce, yet many groups are left behind in the current technological society. Recent federal legislation calls for annual standardized assessments of school children, a prospect that may disadvantage certain minorities who traditionally underperform on these tests regardless of content area. More than ever, a sizable proportion of our nation’s children are at risk of academic failure, posing a serious threat to the current Administration’s goal of “leaving no child behind.”

Group differences in academic achievement are paralleled by disparities in other areas of development, which also concern society. Cultural differences have been documented in delinquency rates, friendship and peer relationships, health, nutrition, civic activity, and onset of sexual activity. These disparities pose an enormous economic and social burden to the nation. Researchers must aim to better understand the factors that work together to promote positive adjustment in children from different backgrounds, so as to place us effectively address the health and developmental needs of all children and families in the 21<sup>st</sup> century U.S.

### **V. Justification for a large, prospective, longitudinal study**

A large study is critical to obtaining sufficient numbers of participants within each of the ethnic groups of interest. This is particularly true when data are gathered on subgroups

within broader racial groupings (e.g., Caribbean vs. U.S.-born blacks). Sufficiently large samples are needed to examine pathways at multiple time points, and to model these paths separately within different groups. The power to examine gene-environment interactions across ethnic subgroups and stages of development is only possible in a large-scale study.

A *prospective* study is necessary to explore the ways earlier environments co-opt to determine developmental outcomes, and how these earlier experiences are similar or distinct across different ethnic groups. A large, prospective study is central to examining interactions among earlier contexts and settings in relation to later outcomes in children.

A large study affords the opportunity to examine ethnically diverse families who vary in terms of socio-economic status and opportunities. By obtaining data on ethnic-group membership, as well as SES, we will be able to disentangle the effects of SES from ethnic group membership on health, cognitive and social-emotional development in children.

## **VI. Scientific Merit:**

The application of cultural ecological frameworks to a large-scale, longitudinal study of children's development would facilitate the exploration of phenomena that have received scant attention in prior studies. Little is known about the pathways to success in different ethnic groups, and how these developmental pathways are similar or distinct across populations. Many studies have inherently confounded SES, acculturation, and ethnic group membership. Thus, for example, we know little about developmental trajectories in native-born versus immigrant groups. The proposed study would enable researchers to identify transactional relations among multiple environments, and describe how these systems operate in tandem to affect development in children from diverse groups.

No study to date has adequately addressed the normative experiences of children from diverse ethnic backgrounds across development, and across environmental experiences and exposures. This gap in the literature is largely this is due to limits to statistical power; it is rare to find a study that contains sufficient numbers of ethnic group minorities to permit valid exploration of the interplay between cultural values and practices, and children's experiences within and across contexts and development. Cultural-ecological frameworks are necessary to address questions concerning sources of within- and between-group variation in children's cognitive, health, and social emotional outcomes. These scientific frameworks can only be tested in large-scale studies.

## **VII. Potential for innovative research**

This study offers the opportunity to place ethnic group membership at the core of theories on human development. The findings from this study will advance instrument

development and validity of constructs in different groups. It also promises to enhance models of effective, culturally sensitive preventive interventions.

## **VIII. Feasibility**

There exist a number of challenges to adequately addressing questions about developmental pathways in different ethnic group.

### Sampling & Retention:

There might have to be over-sampling of many of the ethnic groups of interest. Attrition might differ by group, and substantial, individualized retention efforts will be necessary to maintain acceptable sample sizes in different groups. Mobility in certain groups will be high, and frequent tracking of families will be necessary.

### Measurement:

Many assessment instruments have not been normed or validated on different ethnic groups. Translations of many instruments do not exist, and will need to be conducted. Dialect differences mean that generic translations (e.g., to Spanish) might need to be further adapted in local communities to address the needs of various subgroups within larger groups (e.g., Mexicans vs. Dominicans). The costs of valid translations must be considered. Moreover, pilot testing of translated instruments will need to be undertaken.

Assessing Ethnic Identity. The assessment of ethnic identity will pose a challenge. This study should move beyond the use of extant, global classifications of race by considering subgroups within broader racial groups (distinguishing Mexican Americans, Puerto Ricans, Dominicans). However, there is controversy about how best to assess ethnic identity, and there are growing numbers of mixed-group identities that will need to be considered. Many of the children born into this cohort will have parents from different ethnic backgrounds.

Data Collection. The inclusion of different ethnic groups in the study will require data collectors who are bilingual. The costs of training linguistically diverse data collectors will be a challenge. To the extent possible, data collectors should be drawn from the local communities, and communities should be involved in the process of recruiting and maintaining hard-to-reach families.