The Science of Children Birth to Age 8: Deepening and Broadening the Foundation for Success

Background and Need

In 2000, the groundbreaking report, *From Neurons to Neighborhoods* (N2N), was released. The report focused on the science of children birth to age 5. Twelve years later, much progress has been made in raising the awareness of the importance of birth to age 5 as a period of rapid brain development and a critical period to prepare children for school by ensuring they are healthy, exposed to rich learning environments, and have positive relationships with other children and adults.

Today, the science indicates we need to go broader and deeper to enlarge the foundation for children to be successful in school and life. By leaving best programs and practices informed by N2N at the kindergarten door, we risk disconnecting the rich developmental and health science that informs what children need across the first decade of life from the specialized content knowledge that children gain in classrooms beginning in kindergarten or first grade. This bifurcation between the early childhood field and early elementary school years has left some children, mostly those in disadvantaged, low-resource settings and those with or at-risk for disabilities behind. In particular, we know that even high quality early childhood education programs are not a magic bullet for later school success. Therefore, bridging the science from the early years to the early grades may be able to broaden the foundation for children to be successful not only prior to first grade, but well into the elementary grades.

In the last 12 years, the science on cognitive, executive functioning and emotional regulation skills, in addition to literacy and math knowledge, has enhanced our understanding of how children learn and what may increase the chances they will be engaged learners and successful in school. Currently, most of the research in these areas is siloed. The science on potential levers or linchpins that underlie multiple areas of cognitive ability is just emerging. By analyzing and integrating the science across these multiple domains and finding ways to transfer the knowledge into practice, we may be able to deepen the foundation that children rely on to build learning success well into the future.

These issues are particularly timely given the multiple efforts at federal, state, and local levels to improve outcomes for children through third grade. At the federal level, states are being incentivized to innovate at both in K12 and early childhood education settings. Moreover, the federal education department is encouraging states to turnaround their most poorly performing schools. At the state level, almost every state has signed onto the Common Core State Standards for K12; and many are working on early childhood standards that align with the Common Core. In the area of early childhood, state quality rating improvement systems have been developed to improve the quality of the settings in which young children learn and develop. Other efforts aimed at targeting high-risk children and preventing learning difficulties include: early intervention, nurse home visiting, Head Start, and Early Head Start. The Individuals with Disabilities Education Act and Title I are meant to provide access to resources for children with disabilities and those who live in resource-poor neighborhoods. At the local level, researchers are

implementing intervention programs to improve school readiness and early elementary school success for low-income children and children at-risk for special education. The federal government and private foundations fund many of these intervention and evaluation projects. It is imperative that we bring the science on how children grow, learn, and develop to bear in informing these efforts.

Building upon a body of work on early child development, health, and education across general and specific populations, the Board on Children, Youth, and Families, can provide leadership and direction for engaging a broad and multidisciplinary group of researchers, practitioners, and policy makers who are necessary to address these issues within the current policy context. In addition, the Board is in a unique position to produce a report that can provide recommendations for using the science to inform/re-envision the future of teaching and learning for all children birth to age 8.