

Early Childhood Learning and Development Initiative

A fundamentally new approach to realize the promise of all children

THE CHALLENGE

The formative early years define a critical launch to a positive trajectory of well-being and learning. Young brains undergo rapid development during the first eight years of life and are dramatically shaped by experience. The biological, psychological, and social context of development are inextricably linked. They combine to set the stage for success in the first years of school and build a foundation of benefit for opportunities throughout life.

There is still much we do not know about how our youngest learn and the conditions that help them thrive. We lack a comprehensive understanding of the many forces that shape early development, including the compounding effects of family, socio-economic status, culture, biology, and access to early learning opportunities. To a large extent, research on child development has focused on specific internal processes, but not their integration across diverse contextual experiences and time. For this reason, we do not have definitive strategies for promoting positive attributes in the first years of life, such as resilience, curiosity, empathy, and academic achievement. The absence of an integrated understanding of the whole child in context becomes especially problematic when trying to address the cascading consequences of powerful social determinants of well-being and learning such as trauma, poverty, malnutrition, and racism.

Similarly, the institutions that support early learning and development are not well coordinated. Mandated reading tests rarely occur before the 3rd grade, even though reading difficulties could be detected within the first few years of life when early intervention would be ideal. At the systems level, there is inadequate sharing of information and integration of care between medical, educational, and social service sectors, which hurts children and families who need institutional support the most. Children of families without means and children of color suffer the most.

The COVID-19 pandemic and recent moment of racial reckoning has further revealed the inequities that children face following birth, and even before. Longstanding institutional cracks have become more pronounced with the disruption of traditional support systems.

Without high-quality opportunities for our youngest children, we lose a vital opportunity to prepare our next generation to benefit from school and create positive long-term growth for the child, family, and society.

OUR VISION

Our vision for the Early Childhood Learning and Development Initiative is to enable the growth of the whole child – social, emotional, cognitive, physical, and academic. This depends on understanding how the contexts of learning influence the course of development. Simultaneously, we will advance precise solutions that support every child.

As all parents know, each child is different, and differences across familial, societal, cultural, and economic experiences are vast. The implications for research and practice are immediate – one size does not fit all. We need tailored learning solutions. We also need schools, health care, and social services that work in concert to ensure that every child receives the developmental opportunities needed to thrive in school and in life.

Evidence-based research and solutions can help parents, educators, caregivers, and policymakers move towards more effective approaches. Recent advances in brain and learning science, technology, measurement, and data collection create a potential inflection point where we can produce integrated accounts of, and differentiated solutions for, early learners.

With this initiative, Stanford will foster an understanding of whole-child development that is equitable and effective and design tools, strategies, policy guidance, and training that is accessible, affordable, and respects the unique needs and contexts of every child.

As part of the Transforming Learning Accelerator, we will enable faculty to partner with field-based organizations, providers, and stakeholders to bridge science and design. A unique feature of the accelerator is the production of foundational knowledge through the execution of strong tests of interventions designed to improve learning outcomes. This critically depends on working closely with those who deliver care and opportunity.

WHY STANFORD?

A cross-university faculty task force visited leading universities and programs to determine where Stanford could make the greatest impact. They found that Stanford's interdisciplinary and solution-oriented culture is unique in its ability to draw together an integrated understanding of development and produce solutions that support children into the school years. The task force also identified Stanford researchers and scholars committed to joining forces to make an impact on child well-being in the U.S. and around the globe.

Already, faculty like Michael Frank, Sean Reardon, and Katherine Travis are pioneering work to expand our understanding of the whole child. Professor Frank has gathered infant language recordings from 29 countries in an open database to propel research on the universal and cultural aspects of language development; Professor Reardon has pioneered a national database of educational attainment and inequities; and, Professor Travis of Pediatrics is analyzing how mother's speech recordings impact premature babies in isolation and improve early language skills and brain activity. A collaboration between Dr. Lee Sanders, Chief of General Pediatrics, and education doctoral student, Carrie Townley Flores, uncovered that late preterm birth may have consequences for academic achievement 8 years later. Significant opportunities exist

to expand this work and identify key factors that influence early development in diverse settings.

To accelerate opportunities for every child, Professors Deborah Stipek, Lisa Chamberlain, and Jelena Obradović focus on tools and strategies to support learning and development. Professor Stipek has expanded research in early childhood math and accelerated solutions through professional learning, lesson plans, and policy proposals; Dr. Chamberlain has brought nutrition support to underserved families through community-based partnerships; and Professor Obradović focuses on strategies to help children in areas with high rates of poverty, malnutrition, and infectious disease to build executive function skills. Through this focused effort, each of these faculty see new opportunities to advance learning strategies and accelerate their dissemination broadly.

The initiative on early childhood will allow these researchers – and propel others – to collaborate and innovate more easily. As part of the Transforming Learning Accelerator, the initiative will have access to partnerships, technical expertise, space, and funding that expedites discovery and impact.

The initiative complements and coordinates with important university strategic objectives in the areas of identity, diversity, equity in education, learning differences and special education, global education, and health care. Taken together, these areas represent a broad, multi-faceted effort to promote the promise of all children.

OUR PLAN

The Early Childhood Learning and Development Initiative takes a fundamentally new approach to addressing the biggest challenges facing young learners today. Our mission is to connect individual and societal factors to understand the whole child and design tailored solutions that support every child, especially those most at risk. Key research goals include:

Whole Child – Promote equitable development by understanding the interplay of biological, psychological, and social factors.

Understanding the Young Mind – Accelerate understanding of the young brain and how experience shapes the mind. In the first few years of life, more than 1 million new neural connections are formed each second. But we still understand very little about how experience shapes the greatest period of human learning. We will

leverage advances in neuroscience and physiology to expand knowledge of the learning process and test new strategies to promote learning across diverse individuals.

Broadening the Evidence Base – *Innovate new approaches to gathering evidence that increases diversity, precision, and scale and creates a window into the conditions of development.* Efforts to collect and integrate developmentally relevant evidence from biology, family, society, culture, and class have been limited. We will harness recent advances in biometric technology, virtual and in-situ engagement, and big data to gather information about early development in varied contexts.

Integrating Knowledge – *Integrate physical, biological, social, cultural, and psychological research to understand the factors that drive positive development.* To understand the complex interplay of factors that support thriving, we will analyze early development across diverse contexts to generate more precise and effective tools, strategies, and policies. In our work we will focus on children who face adversity and identify comprehensive ways to support their development.

Every Child – **Design for the diverse needs of children by creating early learning and development tools, strategies, and training.**

Creating Tools & Strategies – *Produce tools and strategies for parents, caregivers, educators, and advocates that deliver tailored educational opportunities to those most in need and at risk.* We will create better ways to help children build lifelong skills in the early years – from academic, to socio-emotional, to executive function. This not only includes productive learning activities and social interactions, but also includes ways to mitigate a developmental context of poverty, racism, malnutrition, and unstable family structures. We will work with partners to ensure that we create solutions that providers can and want to use, to test the efficacy of solutions, and to create pathways to scale.

Building Systems & Supports – *Architect a future system to coordinate health, education, community, and social service institutions to support children and families.* Young children, especially those facing adversity, need integrated help from pediatricians, caregivers, and other providers. We will identify the communication and service gaps across early childhood support systems and create new processes, data systems, policies, and guidance to bolster them.

Accelerating Research to Practice

Critical to our mission is to bring research findings to practice for broad impact. Through this initiative, we will



render knowledge into its most usable form; namely, designs that people and institutions can use. Discovery and design in the ultimate context of application ensures the relevance and usability of solutions. There will be a major effort to increase the porosity of Stanford to parents, caregivers, and institutions who hold ultimate responsibility for delivering opportunities to children. This engagement can take many forms including in-residence positions for field experts, stakeholder and community workshops, cross-sector convening, parental and educator training, and identifying key partners with whom to do research and design work. We also need to partner with agencies and corporations who have pathways and expertise for scaling high impact solutions.

Outcomes

Stanford is creating a new global hub of research and design in early childhood learning and development. The goal is to support the whole child and every child. We will work across disciplines and institutions, along with partners to strengthen early childhood learning and development opportunities through better tools, strategies and systems. These discoveries will support parents, caregivers, educators, and advocates to help every child and especially those facing adversity and in greatest need. Key outcomes include:

- Discover new insight into the young brain and how to optimally support knowledge and skill development needed for academic, social, and emotional success.
- Expand understanding of how a young child's diverse exposures intersect and impact early development - from positive influences to the effects of trauma, racism, poverty, and malnutrition.
- Build new partnerships with organizations that support childcare providers, parents, and their advocates to jointly focus on critical research needs, pilot promising ideas, and scale successful solutions.

- Create research-informed precision tools and strategies that better support early learning and development across diverse individuals and contexts and can be easily implemented.
- Develop targeted strategies for counteracting the effects of adversity on young children, leading to measurable progress in elementary education and later life metrics.
- Broadly share early childhood learning guidance, curriculum, games, and policy recommendations accessible to parents, teachers, caregivers, and leaders via the web, training, and partner networks.
- Realize new processes and systems for connecting and sharing information across health, education, and social services to ensure a solid foundation of support for young children.
- Create learning and research opportunities for students to engage in an interdisciplinary approach to early childhood.

NEXT STEPS

The faculty task force recommended key steps for launching this initiative:

Catalyze interdisciplinary research – In 2021, the initiative will launch with seed funding to support researchers focusing on the main research thrusts: 1) tailored learning strategies and assessments for every child; and 2) whole child development across settings and systems. Subsequent funding will emphasize interdisciplinary collaborations with the prospect of larger grants.

Connect and expand Stanford expertise – In 2021 we will build a network of faculty who work in early childhood and those in adjacent fields. We will focus on a senior hire who will direct the initiative and can draw talent from across Stanford’s schools and Institutes. An additional hire will ideally focus on methods for promoting early learning with strong considerations for the contexts and providers who deliver educational opportunities. Possible topical areas include early instruction and bi-lingual development.

Build partnerships – In the first year of the initiative, we will convene stakeholders and researchers to assess early childhood partnership opportunities. We will begin by examining existing Stanford partnerships with community pediatric clinics, school districts, special education services, and groups focused on diversity and inclusion. We will then identify and connect with new public, industry, and non-profit organizations and institutions that support, promote, or reach young children and/or their providers. Partnerships will focus on joint research

interests, data sharing, research design, pilot testing, and/or dissemination of findings.

Highlight emerging innovations – We will highlight some of the most promising work in early childhood development. In 2022, we will launch a conversation series with leading academics, industry experts, and field-based providers to explore critical early development needs and best practices. The goal will be to share knowledge broadly, fuel intellectual curiosity, share new findings, and spark innovation.

In future phases we will expand interdisciplinary research activities, partnership work, and engagement of Stanford students.

Plans articulated here may undergo further refinement.

ACADEMIC LEADERS

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