

## Driving Science-Based Innovation to Strengthen the Foundations of Lifelong Learning, Behavior, and Health

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## Building a Successful and Sustainable Society Starts in Early Childhood

Healthy development in the early years provides a strong foundation for educational achievement, economic productivity, responsible citizenship, lifelong health, strong communities, and successful parenting of the next generation.

Advances in neuroscience, molecular biology, genomics, and the behavioral and social sciences could be mobilized to catalyze more effective twogeneration policies and practices across multiple sectors to reduce disparities in learning, behavior, and health.

## **Experiences Build Brain Architecture**



## Barriers to Educational Achievement Emerge at a Very Young Age



Source: Hart & Risley (1995)

#### Significant Adversity Impairs Development in the First Three Years



#### **Biological "Memories" Link Maltreatment in Childhood to Greater Risk of Adult Heart Disease**



### **Toxic Stress Derails Healthy Development**



#### Creating a New Paradigm for Early Childhood Policy and Practice

Early experiences affect lifelong health **and** learning Healthy development requires protection **and** enrichment



#### Generating Hypotheses to Guide New Intervention Strategies

Early experiences affect lifelong health **and** learning Healthy development requires protection **and** enrichment

Protection and enrichment for young children require capacity-building for adults

2 Improved parenting skills also enhance employability and economic stability

> 3 Strong neighborhoods reduce the burdens of adversity

#### Skill Building for Parenting and Economic Self-Sufficiency Points to the Foundational Role of Executive Function and Self-Regulation Skills



These core dimensions of adult competence include the ability to focus and sustain attention, set goals and make plans, follow rules, solve problems, monitor actions, defer gratification, and control impulses.

#### The Challenge: The Ability to Change Brains and Behavior Decreases Over Time



#### The Opportunity: Circuits for Executive Function Skills Are Located in Brain Regions that Exhibit an Extended Period of Plasticity





## The Time Has Come to Create a New Era in Early Childhood Policy and Practice

Practitioners and community leaders are hungry for new ideas to address problems in areas where intervention effects are variable.

Policymakers and civic leaders are looking for fresh thinking about how to increase the returns on investment in education, health care, and human services.

Advances in science and creative partnerships could build on current best practices and catalyze new strategies to equalize opportunities, increase social mobility, and improve life outcomes.





# I have not failed. I've just found ten thousand ways that won't work.

-Thomas Edison



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