

Charles A. Nelson

2021 Klaus J. Jacobs Research Prize Recipient

Harvard Medical School Professor Charles A. Nelson receives the 2021 Klaus J. Jacobs Research Prize for his groundbreaking research on the impacts of childhood adversities on brain development, behavioral disorders, and social stability. His 20-year seminal study with the Bucharest Early Intervention Project, demonstrated that many of the deleterious effects of adversity can be prevented and reversed with screening and early interventions.

His studies of the effects of childhood adversity have been instrumental in changing adoption, refugee, and poverty programs around the globe, and his findings have prompted many other researchers in cognitive science, public health, and social science to further examine specific aspects of biological and social disorders related to adversities from war to parental abuse.

Impacts of Early Adversity

Nelson is Professor of Pediatrics and Neuroscience and Professor of Psychology in the Department of Psychiatry at Harvard Medical School, and Professor of Education in the Harvard Graduate School of Education. He also holds the Richard David Scott Chair in Pediatric Developmental Medicine Research at Boston Children's Hospital, and he serves as Director of Research in the Division of Developmental Medicine.

In his work with the Bucharest Early Intervention Project (BEIP), Nelson has demonstrated over the past 20 years that children experiencing early and prolonged psychosocial deprivation suffer permanent impairments and delays to neural, biological, and psychological development. Importantly, if institutionalized children are removed from such environments before the age of ~2 years, many of these deleterious effects can be reversed.

Expanding Challenges

More recently, Nelson has turned to the harms done to children by domestic violence, maltreatment, and malnutrition, in studies such as the Bangladesh Early Adversity Neuroimaging Project (BEAN), which is focused on infants and young children growing up in an urban slum in Dhaka, Bangladesh.

The study has demonstrated that these adversities can lead to reduced brain volume, altered brain connectivity, and poor overall cognitive performance.

In the next 5 years, Nelson will continue to study the neural underpinnings of critical periods in childhood development and how and whether critical periods lost to adversity can be restored through therapeutic intervention. “Understanding how to rescue a critical period has important implications for developing more effective treatment strategies for children who have been deprived of key experiences or have been exposed to adverse experiences in the first years of life,” explains Nelson.