



32nd Wisconsin Family Impact Seminar January 22, 2014

The Science of Early Brain Development A Foundation for the Success of Our Children and the State Economy

This seminar was funded by the School of Human Ecology, the School of Social Work, and the College of Letters and Science at the University of Wisconsin-Madison, and Cooperative Extension at the University of Wisconsin-Extension.

Executive Summary

Children's experiences during the first few years of life shape the architecture of the brain. The developing brain can be compromised by chronic exposure to trauma such as persistent neglect, repeated abuse, severe maternal depression, or parental substance abuse that occurs with or without the added burden of poverty. Children's response to unrelenting stress can be toxic to their immature brains and can contribute to a lifetime of impairments in physical and mental health, learning, and behavior. Children's stress levels can be buffered and brought back to baseline by relationships with caring, responsive parents and high-quality providers of early care and education. Influencing a baby's brain early in life is easier than reviving it later, and less expensive than the subsequent costs of remedial education, clinical treatment, public assistance, incarceration, and so forth. This briefing report addresses two questions through an economic, neuroscience, public policy, and family impact lens: How can cutting-edge research on early brain development inform state policy decisions on issues ranging from child care to foster care, from education to workforce preparation? What role can public policy play in ensuring that Wisconsin's children get off to a great start in life?

Arthur Rolnick

Using an economic lens, the first chapter is written by Arthur Rolnick, former Senior Vice President and Director of Research at the Federal Reserve Bank of Minneapolis. When governments invest in high-quality early childhood education, they are investing in economic development—the future workforce of their economy—with an extraordinarily high public return. Careful studies have demonstrated that for every \$1 invested in high-quality early childhood programs, there is a return of \$4 to \$16. It is primarily society that benefits from these returns through higher worker productivity, lower education costs, reduced crime, and less government assistance. Investments that reap such high returns should be a top economic development priority for state policymakers. However, it remains a challenge to scale up the types of high-quality programs that produce such large returns. To address that challenge, the Minnesota Early Learning Foundation funded and evaluated two flagship programs: a

market-based, 4-star rating system to improve the quality of early childhood programs, and a parent choice scholarship program for low-income families that supports parent mentoring and tuition for children to attend highly-rated programs.

Pat Levitt

Using a neuroscience lens, the second chapter is written by Pat Levitt, Provost Professor of Neuroscience, Psychiatry, and Pharmacy at the University of Southern California. Decades of research reveal how the brain develops and the ways that children's early experiences are built into the architecture of the brain. The challenge that policymakers face is how to capitalize on this exciting new science and its potential for building a solid foundation for economic productivity, responsible citizenship, and a prosperous society. The environments children grow up in shape how the brain develops with one powerful influence being toxic stress. Even among children as young as infants, toxic stress can damage the brain's response to stress making it difficult to correctly interpret the world, function at a high level, and avoid problems later in life. Children's ability to cope with stress depends, in part, upon stable and caring relationships with parents and the adults who care for them. Healthy development is threatened, not only by bad things that happen to children, but also by the absence of good things. One prevalent threat to children's healthy development is severe neglect,

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a form of toxic stress more common than physical or sexual abuse. Children who have been neglected have the capacity to recover with promising interventions that target both the child and their parents/caregivers. In evaluations, programs that build supportive relationships produce biological changes in children's response to stress that can have lifelong benefits.

Katherine Magnuson (presented by Dave Riley)

Using a public policy lens, the third chapter is written by Katherine Magnuson, Professor of Social Work at UW-Madison. Wisconsin can build on several initiatives to position the state as a leader in early childhood policy. To do it right, public-private partnerships that share responsibility offer greater potential than either government or private action alone. To guide their decisions, policymakers can look to evaluations of promising interventions that transform the lives of young children who have experienced trauma, along with data on the track record of Wisconsin policies. As of 2012, Wisconsin ranked 4th in the nation for access to public pre-k programs for 4-year-olds, but 21st for 3-year-olds. In 2010, Wisconsin established YoungStar, its 5-star child care quality improvement and rating system. Currently, 70% of rated programs in the state are at the 2-star level; the largest barrier for providers to move up to 3 stars is meeting educational standards for staff in a workforce with high rates of turnover. Wisconsin's two public-private programs for improving educational attainment and compensation for the early childhood workforce—T.E.A.C.H. and R.E.W.A.R.D.—both have long waiting lists. When deciding what to invest in, the key is choosing evidence-based strategies that are implemented well with funds set aside for evaluation. The up-front costs may be less important than the long-term return on investment; programs that cost less because they employ less competent staff are a waste of money if they do not have the expertise it takes to produce impacts. When deciding who to target, state and local data can identify those most vulnerable—children with special needs; families of color; those experiencing toxic stress; families facing health or financial challenges; and so forth.

Using a family impact lens, stable and caring families can help children cope with stress and contribute to healthy brain development in several ways. Parents and caregivers promote children's physical health by assuring proper nutrition, providing preventive health check-ups, protecting children from toxins and preventable injuries, and decreasing exposure to toxic stress. Parents form secure attachment relationships with their children by being reliably available and responsive. Secure attachment predicts a number of qualities that most societies value in their citizenry—competent problem solving, involvement, leadership, and self-confidence.

One key feature in many effective programs and policies for young children is how families are viewed, engaged, and empowered. Typically, the abuse or neglect of a child is viewed as a criminal justice violation rather than as a matter of child development in the context of a family in crisis. When families are in crisis, interventions that work best focus on the cause of the stress. For example, addressing family factors such as addiction to substances, parental depression, medical challenges, and social isolation have been shown to have a positive effect on child outcomes even though they do not specifically address children. When both children and their parents are engaged in interventions, programs have been shown to turn around the lives of children, both those who continue to live with their family and those placed in foster care. In Minnesota's promising early childhood policies, parents were deliberately empowered. Low-income parents were informed about the importance of child care quality in their children's development, provided tuition support to high-quality programs, and mentored by home visitors on program selection.

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Where research meets family policy

The Wisconsin Family Impact Seminars are a continuing series of policy forums that provide policymakers with objective, high-quality research on issues such as early brain development, jobs, evidence-based budgeting, growing the state economy, corrections programs, long-term care, prisoner reentry, health care, workforce development, and preparing youth for workforce success. The seminars aim to (a) build greater respect for and use of research in policy decisions; (b) encourage policymakers to examine policies and programs through the lens of family impacts; and (c) provide neutral, nonpartisan opportunities for legislators to engage in open dialogue for fostering relationships and finding common ground. Check out our website (www.familyimpactseminars.org) for audio and video of speakers at previous seminars (click on "State Seminars"), and for briefing reports and other resources written specifically for state policymakers attending over 190 Family Impact Seminars convened by 26 different states (click on "Publications"). The briefing report described here, "The Science of Early Brain Development: A Foundation for the Success of Our Children and the State Economy" accompanied the 32nd Wisconsin Family Impact Seminar. The full report, edited by Karen Bogenschneider, Director and Olivia Little, Doctoral Student, can also be downloaded from our website. Hard copies are available to state legislators at no charge by contacting Seminar Coordinator, Jennifer Seubert, at (608) 263-2353 or jseubert@wisc.edu.