THE SCIENCE OF YOUNG CHILDHOOD

Kelly Sullivan, Ph.D.
Licensed Psychologist and Assistant Professor
Duke University Medical Center, Department of Psychiatry and Behavioral Sciences
and
Director of Mental Health Services, Center for Child and Family Health
“I have no memories from that time so…”  
(Kyle Pruett, former president of Zero to Three)

Caring for an young child comes naturally
IMAGINE... WHAT IF WE EACH GOT ONLY ONE COMPUTER TO LAST OUR WHOLE LIFE?

- How would we want that computer to be built?
- Even if we can update it throughout its life, how important is it that it starts with great capacity and skill from the beginning?
OUR BRAINS: OUR LIVING COMPUTERS

Functioning:
• Educational
• Social
• Health
• Mental health
• Occupational

= HUMAN CAPITAL
IS IT NATURE OR NURTURE?
BUILDING THE BRAIN THROUGH EXPERIENCES

36 weeks gestation  | Newborn  | 3 months  | 6 months  | 2 years  | 4 years  | 6 years

Synapse formation  | Synapse pruning

center for
CHILD & FAMILY HEALTH
“SENSITIVE PERIODS” IN EARLY BRAIN DEVELOPMENT
Rate of Return to Human Capital Investment at Different Ages

Trauma and the Brain

Staying alive is most important function

Exquisitely sensitive to environment

Scary events (alternatively, safety and security) influence brain development in powerful ways

Prepared by Kelly Sullivan, PhD
Between 20% and 50% of American children are victims of violence within their families, at school, and in their communities (Finkelhor & Dziuba-Leatherman, 1994)

An even greater number are witnessing violence and may be traumatized
TRAUMA AND EDUCATIONAL OUTCOMES

- Decreased intellectual functioning
- Decreased reading ability
- Lower grade-point average (GPA)
- More days of school absence
- Decreased rates of high school graduation

Hurt et al., 2001; Delaney-Black et al., 2002; Grogger, 1997.
WE ARE SOCIAL CREATURES
WHO IS IN THE FACTORY WITH THEM?
THE YOUNGER WE ARE THE MORE WE LEARN THROUGH SOCIAL INTERACTION

Performance on Mandarin $\text{t}^\text{h}-\text{c}$ Sounds

- Taiwanese Infants
  - Exposed to Mandarin
- American Infants
  - Exposed to English
  - TV Audio

Percent Correct

60 - 70

6-8 months 10-12 months

TED.com presentation: 2011,
http://www.ted.com/talks/patricia_kuhl_the_linguisticgenesis_of_babies.html
Our goals for children will not be met if those in the factory with the child are not interacting with the child and if they do not know the science about how you build the brain.
THANK YOU!!!

kelly.sullivan@duke.edu