

# ***Investing in the Well-Being of Montana's Youngest Residents***



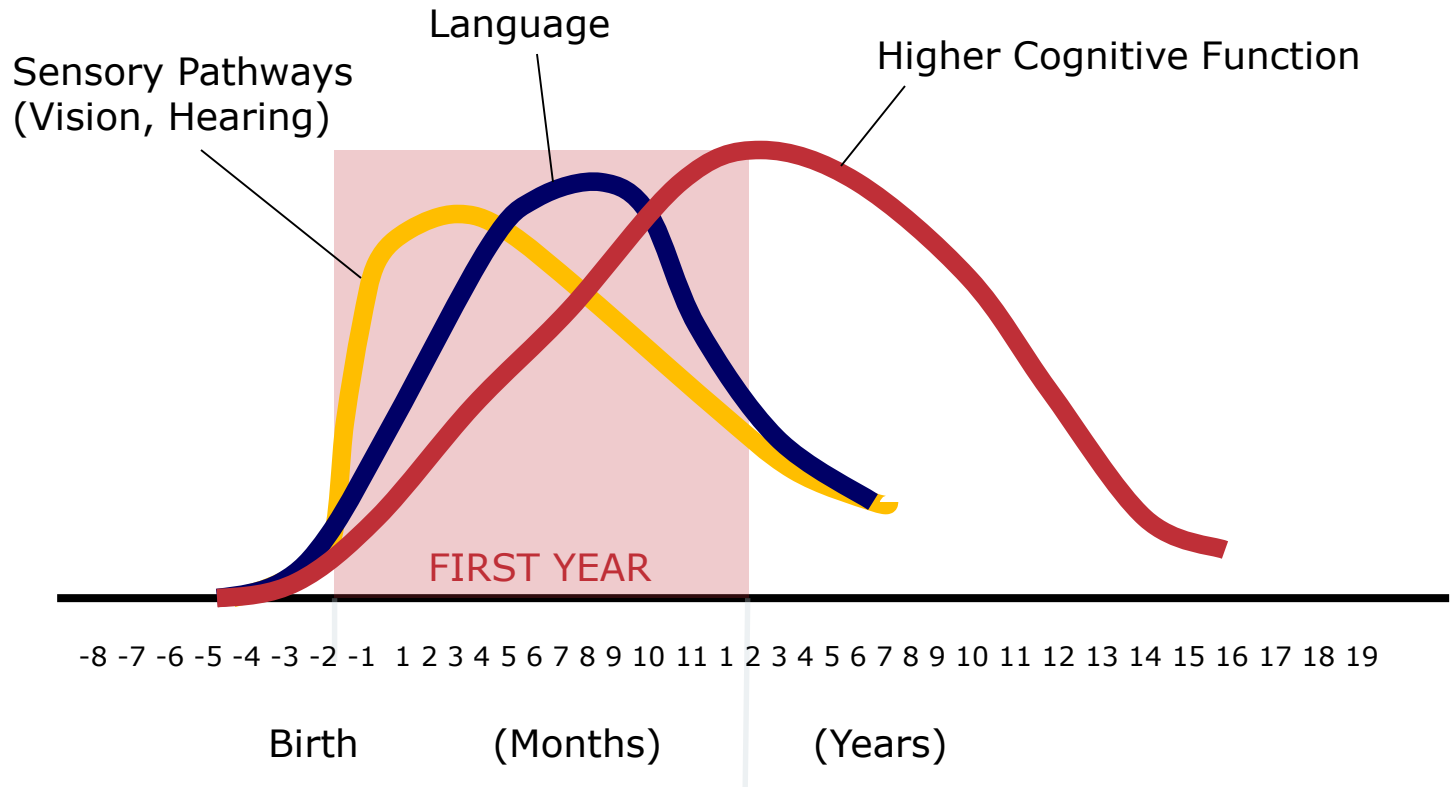
Rob Grunewald, Economist  
Community Development, Federal Reserve Bank of Minneapolis\*

*\*The views expressed here are those of the author and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.*



# Human Brain Development

Synapse Formation Dependent on Early Experiences



Source: C. Nelson (2000)

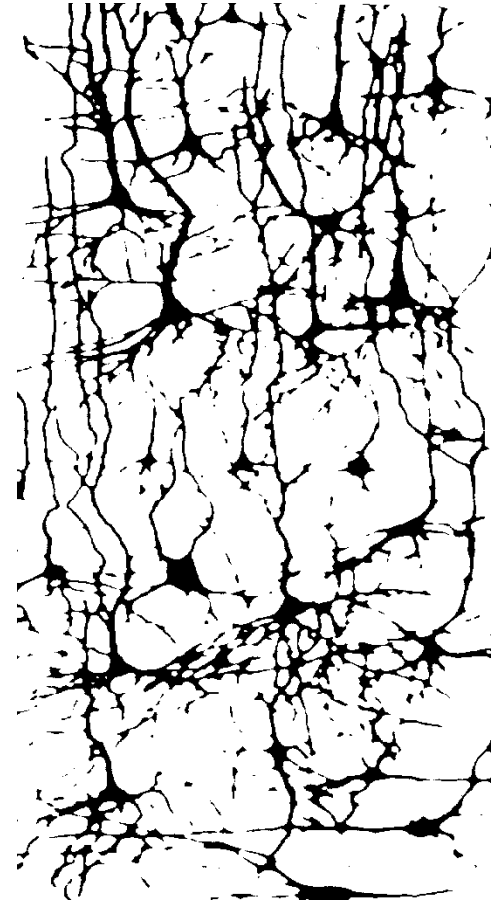
Human  
Brain  
at Birth



6 Years Old



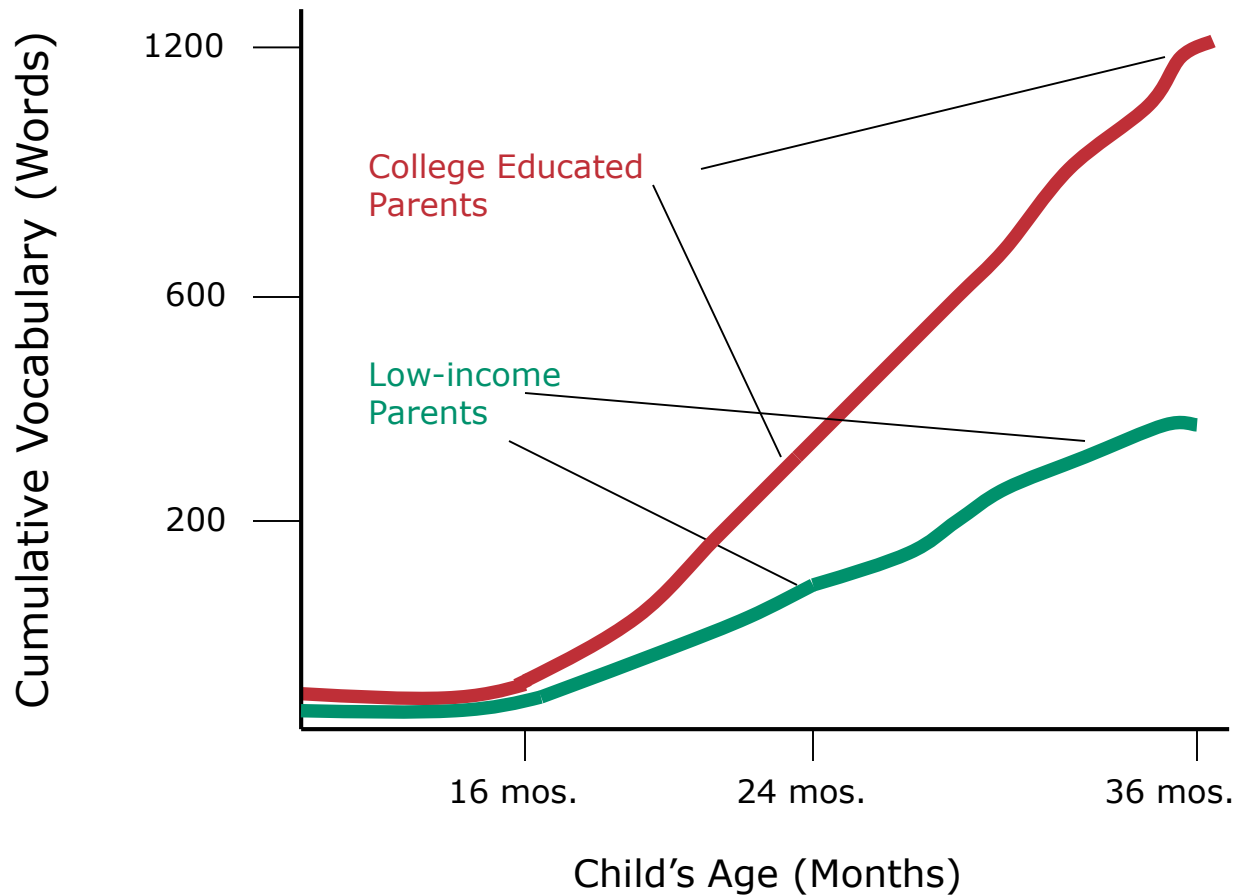
14 Years Old



Source: Chugani, Phelps & Mazziotta (1987)



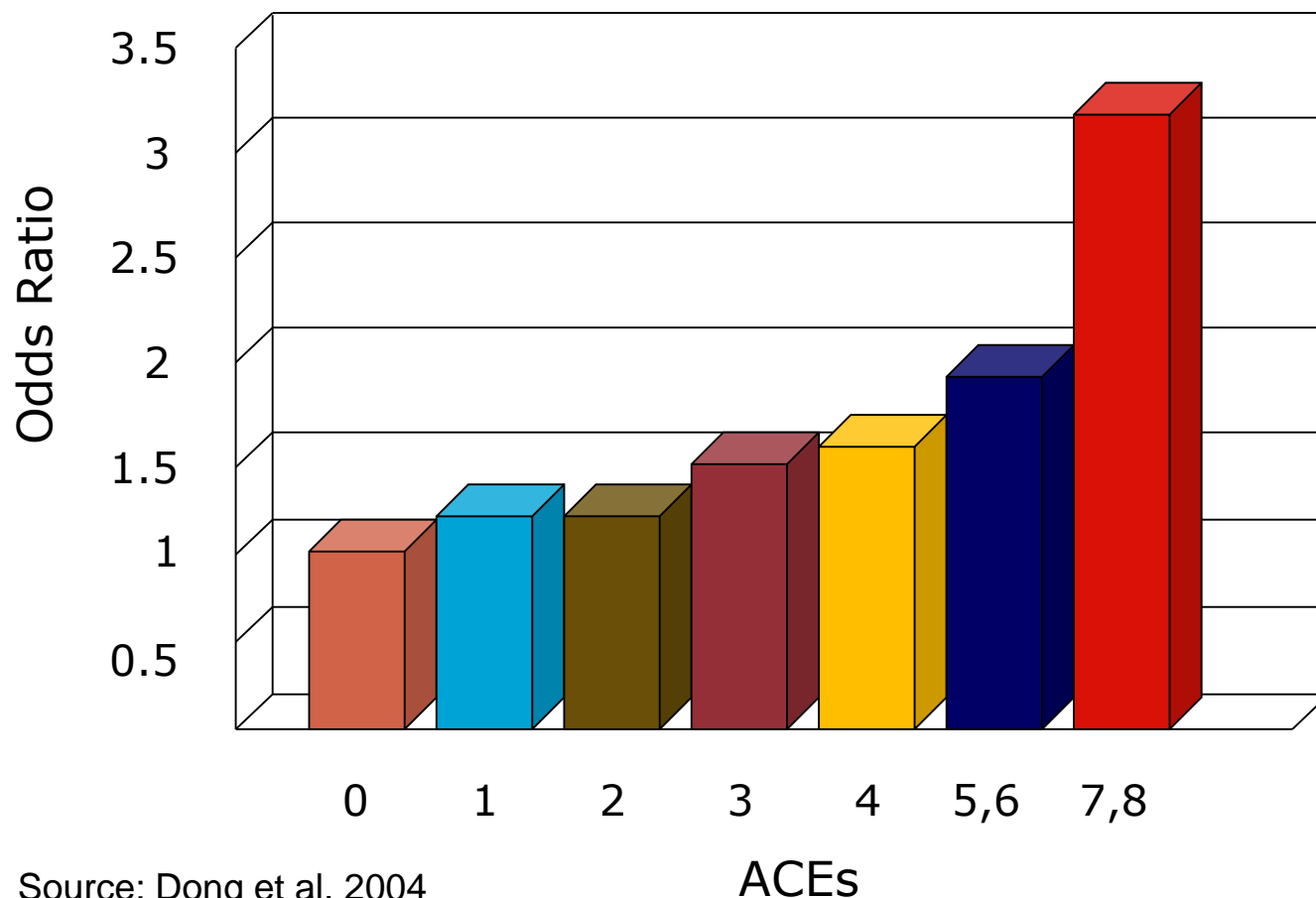
## Barriers to Social Mobility Emerge at a Very Young Age



Source: Hart & Risley (1995)

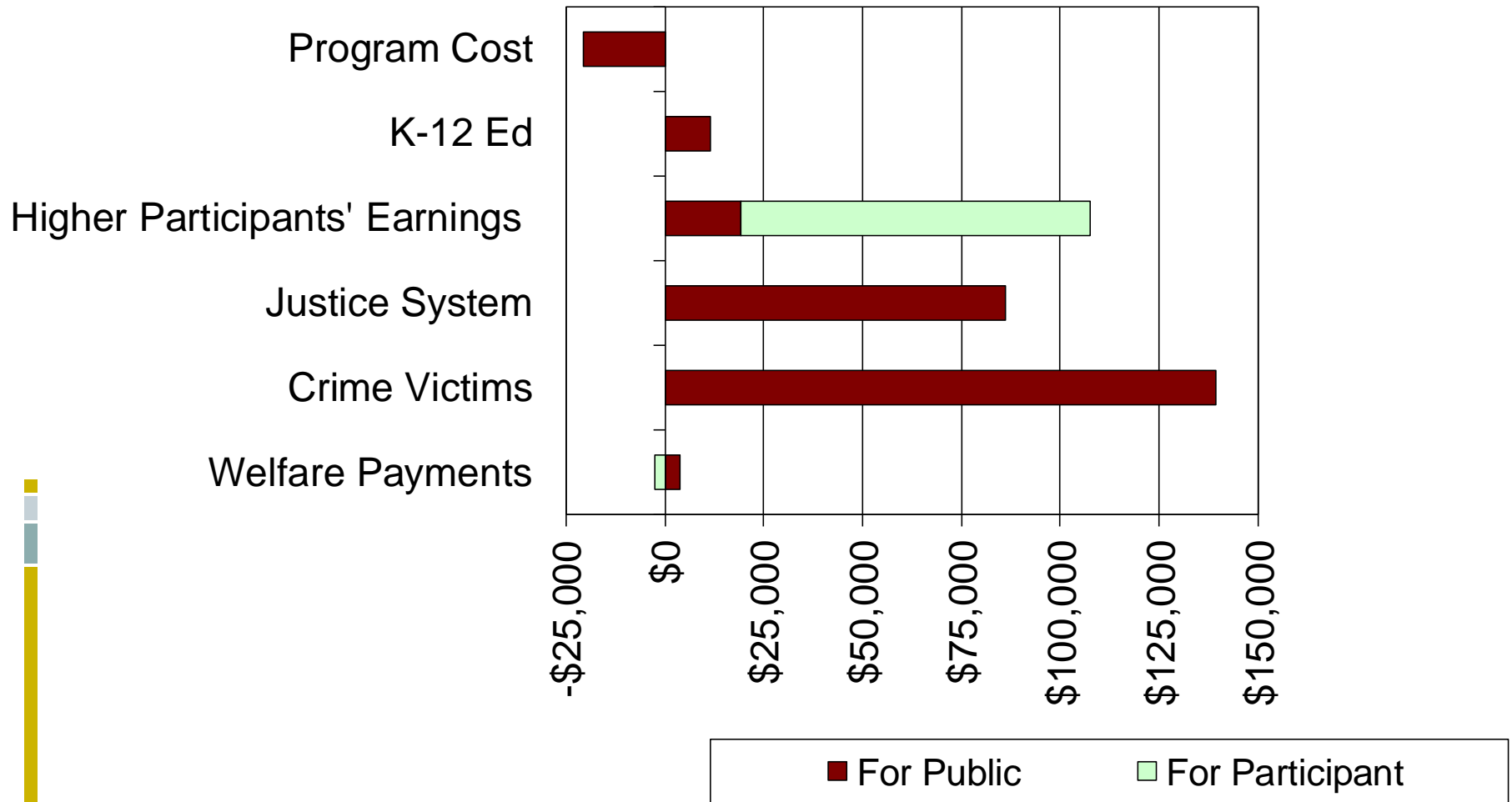


## Risk Factors for Adult Heart Disease are Embedded in Adverse Childhood Experiences (ACEs)



Source: Dong et al, 2004

# Perry Preschool Costs and Benefits Over 62 Years



Source: Schweinhart, et al. (2005)

# Perry Preschool — Estimated Return on Investment

- Benefit-Cost Ratio = \$16 to \$1
- Annual Rate of Return = 18%
- Public Rate of Return = 16%
- Heckman Reanalysis = 10%

Sources: Schweinhart, et al. (2005); Author's calculations; Heckman, Moon, Pinto, Savelyez, & Yavitz (2010)

# Benefit-Cost Ratios for Other Longitudinal Studies

- Abecedarian Educational Child Care
  - \$7 to \$1
- Chicago-Child Parent
  - \$10 to \$1
- Elmira Prenatal/Early Infancy Project
  - \$5 to \$1

Sources: Garcia, Heckman, Leaf, & Prados (2016); Reynolds, Temple, White, Ou, & Robertson (2011); Karoly, et al (1998)

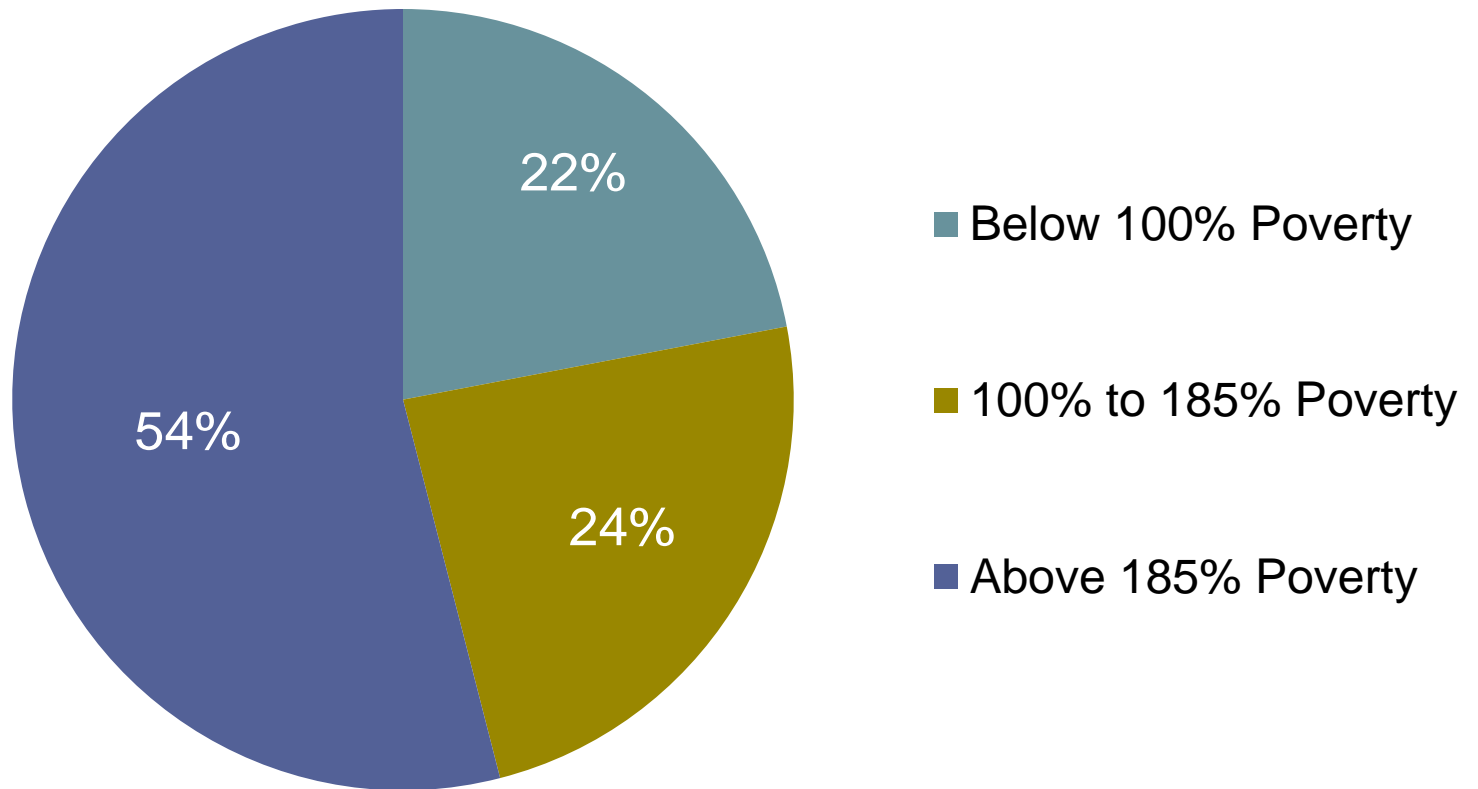


# Lessons Learned from Research

- Invest in quality
- Involve parents
- Start early
- Reach vulnerable children and families
- Bring to scale

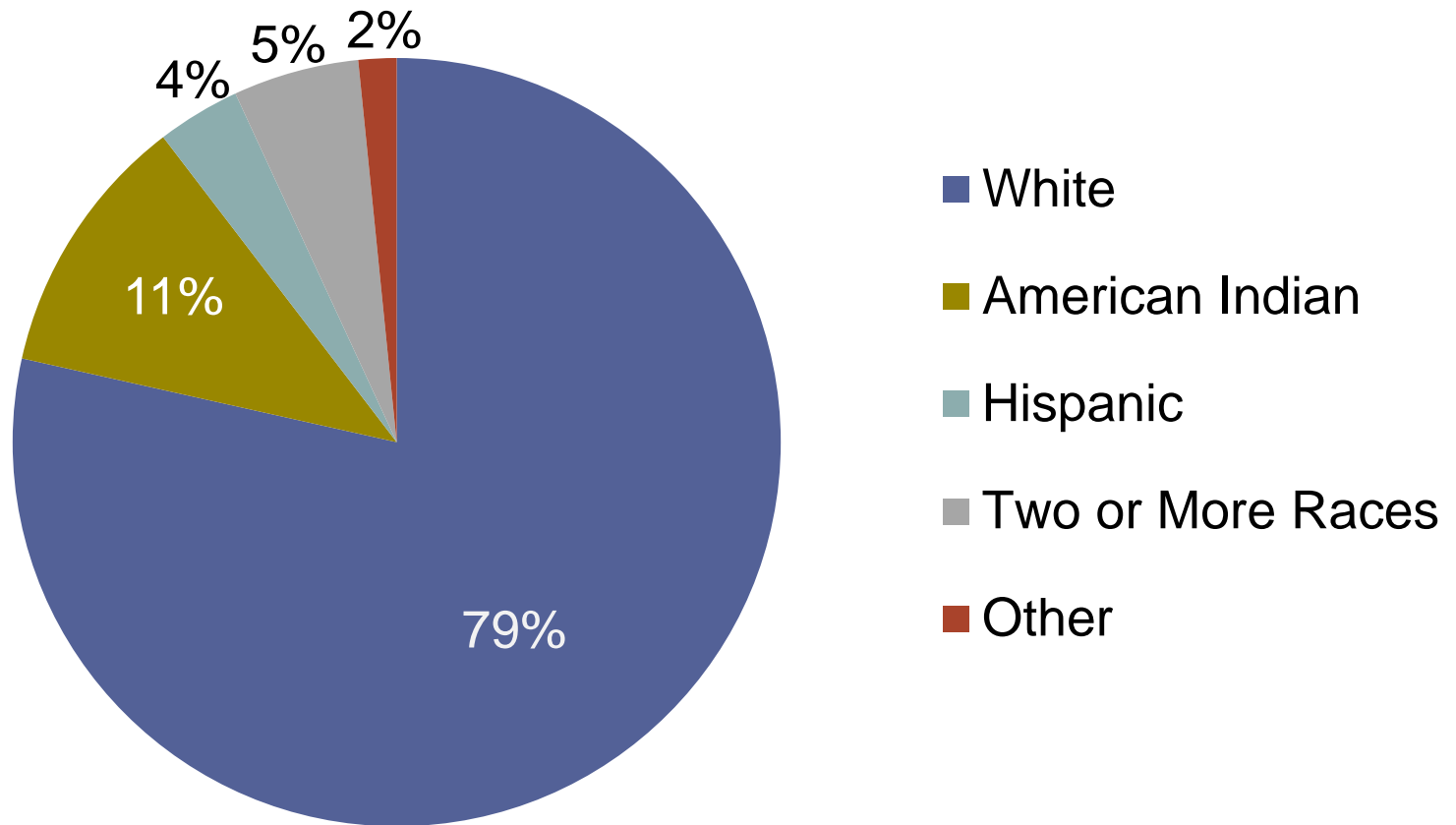


# Montana Children Under Age 6 by Poverty Level



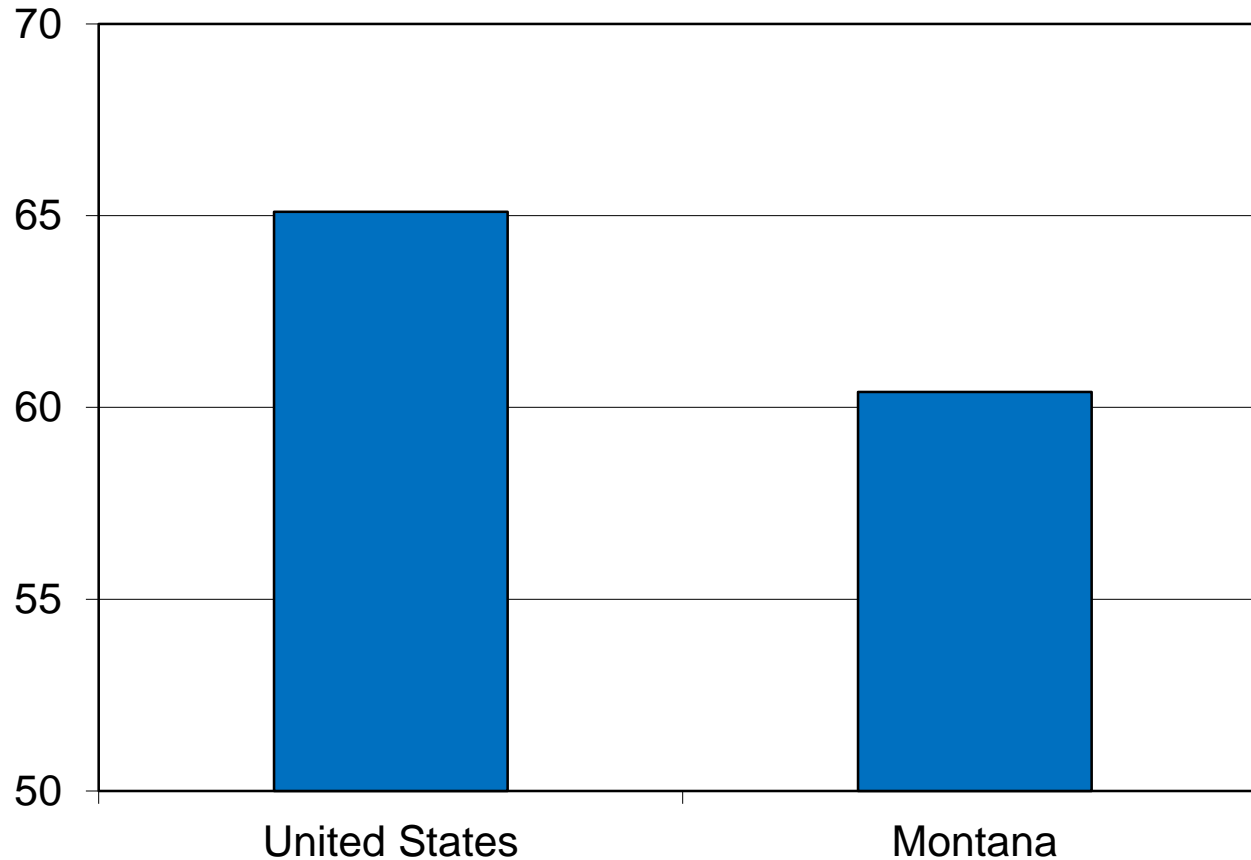
Source: American Community Survey

# Montana Children Under Age 5 by Race/Ethnicity



Source: American Community Survey

# Percent of Children Under 6 Years Old With All Parents in the Labor Force, 2015



Source: American Community Survey

# State and Community-based Early Childhood Development Investment Opportunities

- Access to high-quality early learning programs
- Home visiting programs for families with pregnant women and young children
- Intersection between child protection system and early childhood services, including mental health services
- Health and dental care

# State and Community-based Early Childhood Development Investment Opportunities

- Connecting healthy and local food sources with early learning programs
- Programs for young children and families in Native American communities that incorporate language and culture
- Engaging business leaders in ECD through business mentoring, supporting parent employees, and leadership



## Sources

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**Rob Grunewald**

**Economist**

**Community Development**

**Federal Reserve Bank of Minneapolis**

Email: [Rob.Grunewald@mpls.frb.org](mailto:Rob.Grunewald@mpls.frb.org)

Web: [minneapolisfed.org](http://minneapolisfed.org)