

Technical Barriers to Studying Development and Plasticity

- fMRI has been a powerful tool that has revolutionized our understanding of cognitive and affective neuroscience
- It cannot reliably be used with children younger than 6 years (and that's hard).
- But most of the action in cognitive and affective development occurs before then.
- NIRS has been explored for some time as an alternative technology-- bringing it robustly on line would lead to an explosion in developmental neuroscience.

Genomics, Proteomics, Environment and Neuroscience

- **Influence of life stress on depression: Moderation by a polymorphism in the 5-HTT gene.** Caspi, Avshalom; Sugden, Karen; Moffitt, Terrie E.; Taylor, Alan; Craig, Ian W.; Harrington, HonaLee; McClay, Joseph; Mill, Jonathan; Martin, Judy; Braithwaite, Antony; Poulton, Richie. *Science*. 301(5631), Jul 2003, 386-389.
- Whether this particular finding is replicated or not, data of this sort are the wave of the future.
- Relating behavioral development and data on environmental circumstances to neural substrates to genes and to protein expression is a staggeringly complex problem requiring substantial resources and new training models.