



## **EARLI Exhibit Overview**

The Early Academic Readiness and Learning Intervention (EARLI) Singing Study combines the expertise of UCSD neuroscientists, cognitive scientists, and experts in music education from the San Diego Children’s Choir, working with teachers in Vista TK classrooms, to implement an intensive vocal music program designed to promote the development of fundamental language, cognitive, and musical skills to address potential achievement and opportunity gaps before they open. EARLI champions a win-win model of teacher/researcher interaction by conducting intervention and testing with no time-burden on teachers and sharing enriched information about individual differences of their students, promoting a more personalized learning ecology.

There are four main goals of the EARLI Singing Study: (1) To assess the developmental trajectories of basic behavioral and brain functions in individual children; (2) To characterize relationships between these developing cognitive functions and the development of early academic skills (like literacy and numeracy); (3) To engage TK children in an intensive singing and music program codesigned with teachers; (4) To evaluate possible effects of the singing and music program on developing cognition, behavior, and brain measures in individual children.

In addition, the EARLI Singing Study seeks to provide a more direct line from research on early childhood cognitive and brain development to the implementation of practices that improve the educational care of all children. Because the program is tailored to each classroom and embedded within its existing needs, results from the study can be more readily interpreted and folded into continuing practice based on its successes and shortcomings. In this way, the EARLI Study will help to promote more child-centered pedagogies, by providing teachers with more information about each child’s challenges and progress throughout the school year and over a three-year follow-up period spanning three grades and teachers.

Notably, the EARLI Singing Study will be the first of its kind in the nation to conduct in-classroom brain activity recordings using a new dry, wireless EEG technology designed for comfortable and child-friendly brain measurements with children 4- to 5-years-old. “Inky” is a black plastic headset (somewhat resembling a squid) that children can easily put on and take off for fast and efficient brain activity recording. The Inky character is joined by his friends Ocho the Octopus and Sparky the Neuron in a computer-based game that children play during brain activity recording. This task paradigm, administered on a touch-screen laptop computer, is designed to engage and entertain children while probing all lobes, regions, and functional systems of the growing, learning brain (e.g., visual, auditory, language, memory, attention, executive functions). By combining an appealing music and singing program with new tools for studying individual differences in cognitive and brain maturation, the EARLI Singing Study stands to help both teachers and students maximize learning potential at VUSD.