

Japan-U.S. Brain Research Cooperation Program
Report of Researchers Dispatched to the U.S. for the 2010 Fiscal Year

Field: others

1. Name/Title/Affiliation:

Yusuke Moriguchi, Lecturer, Department of School Education. Joetsu University of Education

2. Project Title:

Neural basis of inhibitory function in young children: ERP studies

3. U.S. host researcher's Name, Title, and Affiliation:

Phillip David Zelazo, Professor, Institute of Child Development,
University of Minnesota

4. Term of Research: From 2010 9 6 2010 9 18
Yr. Mo. Day to Yr. Mo. Day (2 wks.)

5. Abstract, Results, and Research Significance (300 Words):

The current project is aimed to examine the neural basis of inhibitory function in young children. In the previous studies, I examined the development of inhibitory function in young children, using both behavioral and near-infrared spectroscopy (NIRS). However, by the techniques, I cannot investigate early neural processing of inhibitory function. I need to use event-related potentials (ERP) to address the issue.

This stay included about ten days, and therefore what I did during the stay was to prepare the new projects. In the project we would use both NIRS and ERP technique and establish the method to evaluate the development of the brain function in young children. We argued the experiments we would start

At first, we will start an experiment using ERP. In the experiment, children are given the DCCS task, which is a widely measure of inhibitory function in young children. We examine whether children show the N2 components in the frontal areas when they are supposed to exert the inhibitory function. Previous adult studies suggested that N2 component is an index of early neural processing of inhibitory function. We will combine the results with those of NIRS experiments in my lab or the professor's lab.

Although what I did was to prepare the new experiments, the stay enabled me to create an international connection with Professor Zelazo and start the significant project. This project would provide me with an initiative of brain development research.

6. Other (Any concerns regarding the research or special instructions):

(Please attach reference materials.)