

(For JSPS Fellow)

Form B-5

Date (日付)

02/10/2013 (Date/Month/Year: 日/月/年)**Activity Report -Science Dialogue Program-**

(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Chadwick Boulay (ID No. P11470)- Participating school (学校名): Ichikawa Gakuen- Date (実施日時): 01/10/2013 (Date/Month/Year: 日/月/年)- Lecture title (講演題目): Life as an international brain-computer interface researcher(in Japanese)

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The human brain has around 100 billion neurons. Information is passed from one neuron to another electrochemically, and we can measure part of the electrical signal using electrodes on the surface of the head. Hidden in these brain signals is information about brain function. We use a brain-computer interface (BCI) to process the brain signals, reveal the hidden information and use that information to control a computer or other device. Thus, the BCI can bypass diseased or damaged parts of the central nervous system to help restore lost functions. For example, someone with a spinal cord injury can use a BCI to control a robotic arm directly from their brain. Also, learning to use a BCI can help to create long-term changes in the brain. For example, BCI training can help improve attention. At the Ushiba Laboratory for Rehabilitation Neuroscience in Keio University, we attempt to use BCIs to understand how the brain learns motor skills and to help stroke patients recover lost function.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 40 min (分), Q&A time (質疑応答時間) 15 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Used projector, passed around equipment, demonstrated how to get brain signals, attempted to demonstrate virtual reality feedback but there was a computer problem.

◆Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

The accompanying person translated questions and answers and even answered some

questions directly.

◆Name and title of accompanied person (同行者 職・氏名)

Shoichiro Takeda, B4 student in the Ushiba Lab

◆Other note worthy information (その他特筆すべき事項):

I am sorry that the virtual reality feedback did not work. Upon returning to the lab and testing again it worked correctly.

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。): プレゼン後、高校生達が我々の研究に興味を持ち積極的に質問をしてきたのでとてもうれしかった。次世代の研究者を育てる意味でも、最新の研究を紹介することはとても良い刺激になると思うので、この事業はこれからも続けていってほしい。